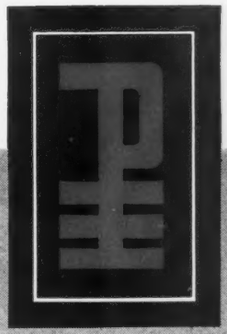
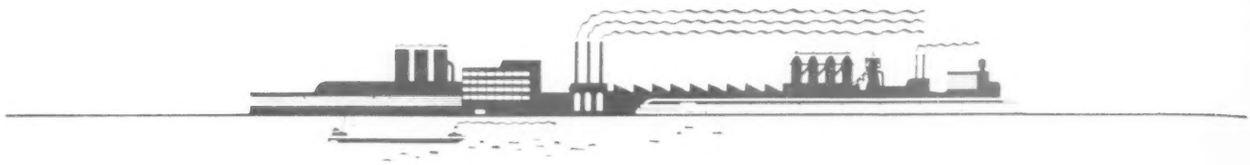
JULY 1947

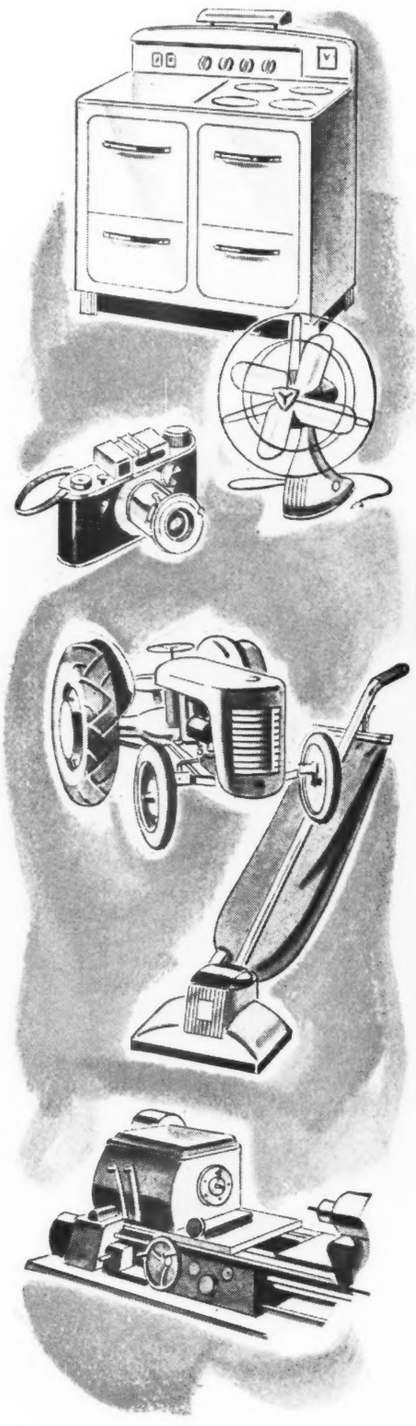


Printing Equipment Engineer

HOW OFFSET LITHOGRAPHY SERVES INDUSTRY



Instruction books



"How-to-do-it", is a typically American question.

There's an ever-growing demand for fast, easy-to-follow instruction literature on home appliances . . . industrial products . . . new gadgets that go with our increased standard of living.

To manufacturers, the making of instruction books is an important job. Correct use of a new product means satisfied customers who recommend it to others. For clarity, good instructions have plenty of step-by-step illustrations, technical charts and cutaway drawings.

What better spot for offset lithography? Whether it's a single sheet or a more comprehensive book, the offset method is more generous with plate space. Clear, sparkling halftones and smooth color areas give eye-appeal that transforms instructions into dual-purpose sales and advertising literature.

With work like this, the new, Harris 17 x 22″ offset press can shoulder the main load in combination shops and small offset shops. As an auxiliary unit in the larger shops, it will keep big presses clear for the long-run jobs. This precision, high-speed press has the same low maintenance, same trouble-free adjustments, same careful engineering as the larger Harris presses. Four form rollers supply superb inking and the famous Harris Stream Feed delivers up to 7000 impressions per hour. For a better run for your money, install a Harris.

You'll be delighted with samples of work produced on the Harris 17x22", shown in a new, 24-page, 4-color book. Send for it today. Ask for "Why Offset Lithography Is On the March".

HARRIS-SEYBOLD

MANUFACTURERS OF HARRIS PRESSES • SEYBOLD CUTTERS • OTHER GRAPHIC ARTS EQUIPMENT

Harris-Seybold Company • General Offices, Cleveland 5, Ohio

MAN ON A "MISSION"... WITH A STA-HI MASTER FORMER

THE MAN: Any stereotyper, on any newspaper, large or small.

●

THE "MISSION": To properly process a dry mat after it comes from the molding machine, and prepare it for trouble-free plate casting.

●

THE OBJECTIVE: Better printing!

●

THE MACHINE: The Sta-Hi Master Former, of course!

STA-HI CORPORATION

1020 CROCKER STREET LOS ANGELES 21, CALIF.

a FULL box at every load

THE NEW ATF LITTLE GIANT

Made by the makers of the famous KELLY presses

LOAD the simplified feeder attachment of the new ATF Little Giant, shown at right, with a *whole* box of envelopes (regular or window) . . . then lift full box lots from the delivery directly back into the original boxes. End or side flap, this press feeds them to the cylinder grippers straight, up to 4000 an hour, and only one can pass the caliper at a time.

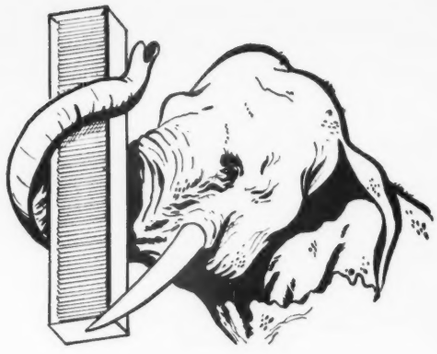
Actual shop experience proves that the new 12x18 ATF Little Giant can handle the biggest percentage of run-of-the-hook jobs in the average plant; including tough jobs of card stock up to 4-ply with or against the grain, gummed stock, tissues and cover stocks at speeds up to 4000 impressions per hour . . . *hour after hour.*

Ask your ATF Salesman for complete details, and sample sheets from straight commercial runs made under normal shop conditions.

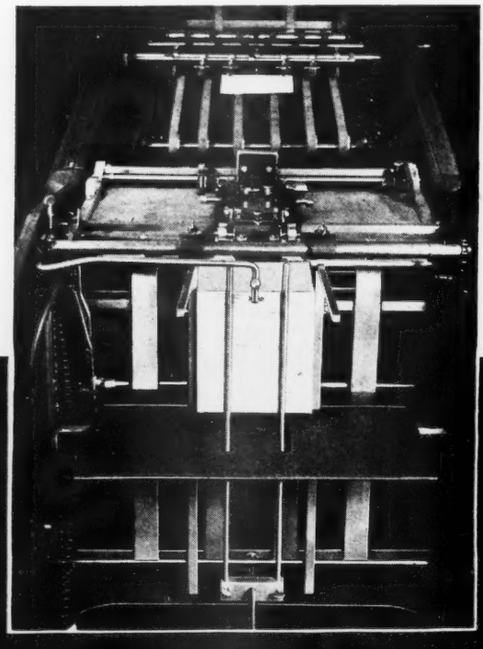
American Type Founders

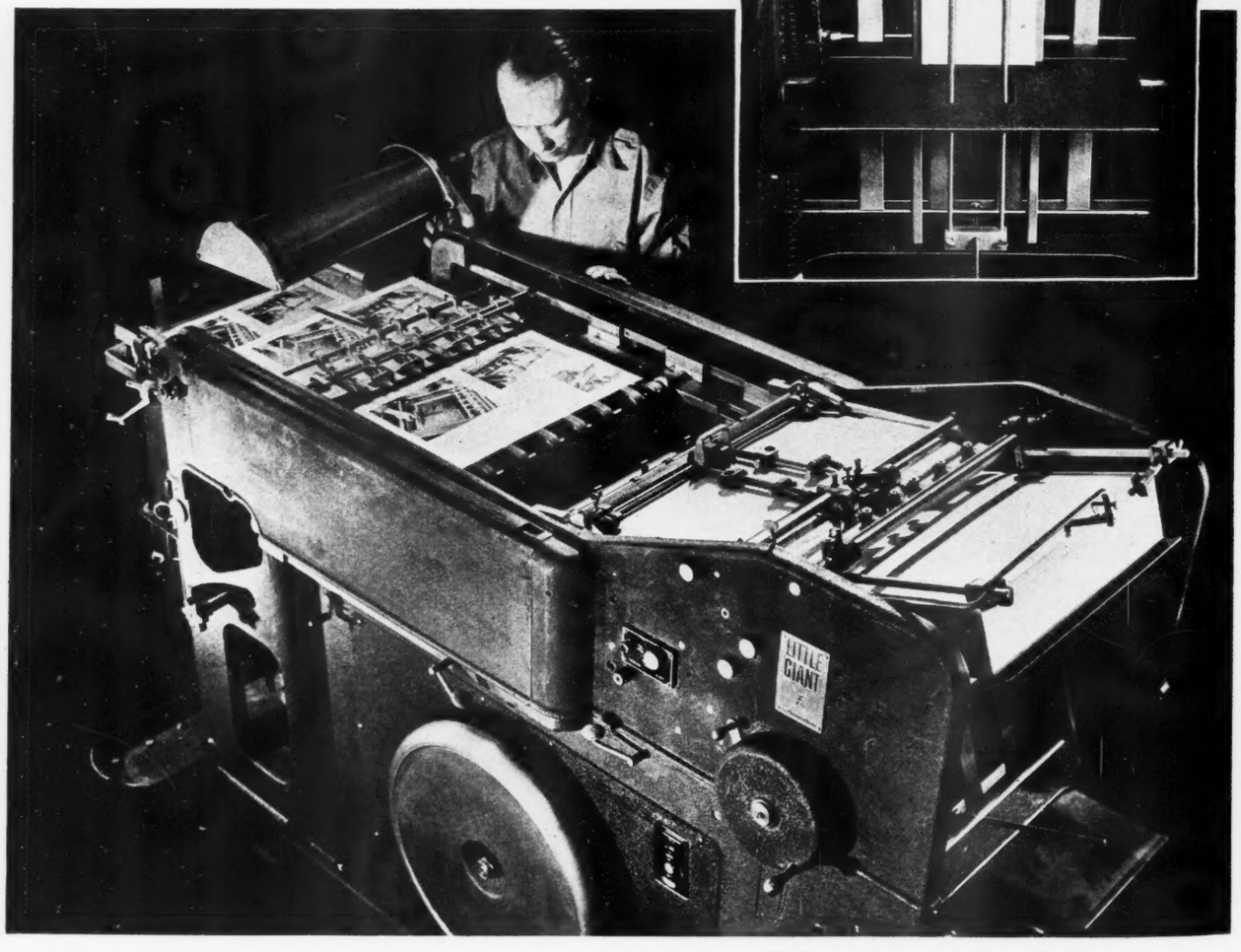
An ATF Associate

200 Elmora Avenue, Elizabeth B, New Jersey

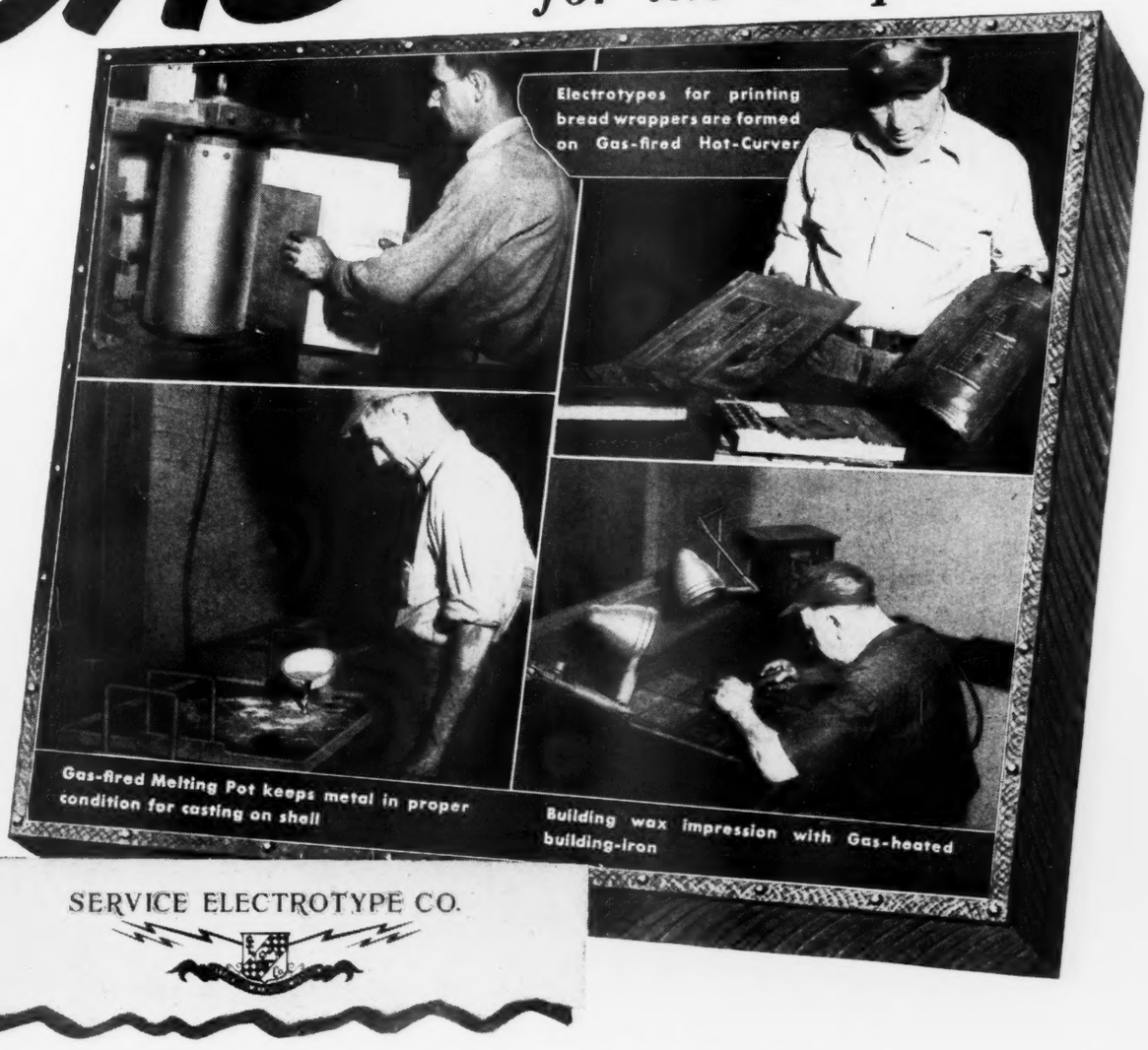


This envelope attachment, for use with small envelopes and postcards, prevents the pile from buckling or stock swinging sideways when leaving the suckers.





GAS *Universal Service Fuel for the Graphic Arts*


Electrotypes for printing bread wrappers are formed on Gas-fired Hot-Curver
Gas-fired Melting Pot keeps metal in proper condition for casting on shell
Building wax impression with Gas-heated building-iron
SERVICE ELECTROTYPE CO.

THOUSANDS of Service electrotypes, including the one from which this page was printed, are typical examples of the flexibility of Gas Equipment and the applicability of the productive flames of GAS in printing and publishing operations.

Just glance over the list of GAS applications in the plant of Service Electrotype Company, Pittsburgh, Pa.—

- **Metal-melting pots**
- **Hot-curvers**
- **Wax building-iron heaters**
- **Oven for heating wax cases**
- **Wax heating in stop-off machine**
- **Boiler for**
  - **Steam and hot water supply**
  - **Wax pots and melting tables**
  - **Copper-plating tank**
  - **Drying casts**
  - **Removing shell from mold**

Here is adequate proof that GAS is the universal fuel for process heating in electrotype production.

Throughout the graphic arts industry engineers and production managers specify the productive flames of GAS for ink drying, paper curing, stereotype pots, type-metal melting, and the myriad heating tasks of printing and publishing. Your local Gas Company Representative will assist in selecting the proper Gas Equipment for your heating requirements.

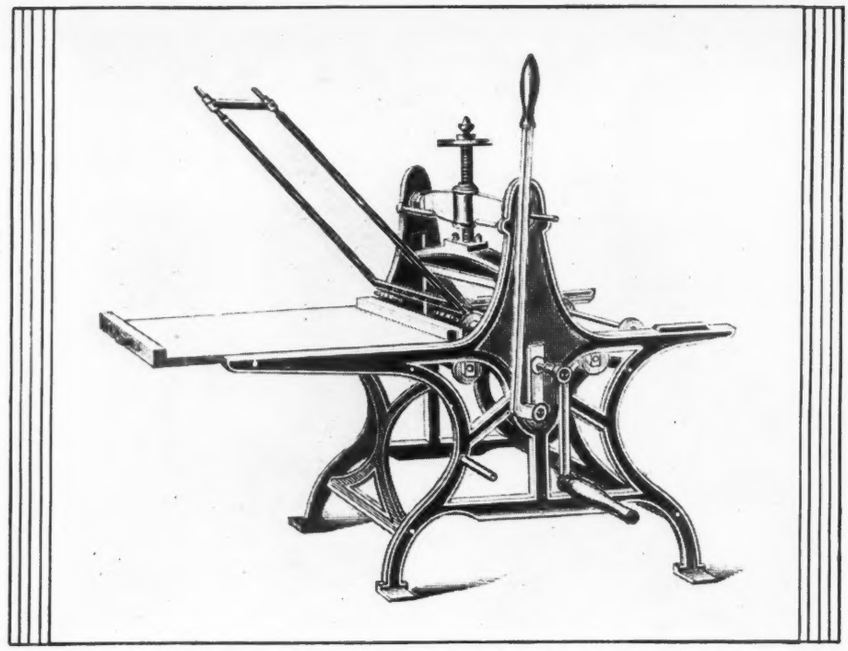
AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING



HAND LITHOGRAPHIC PRESS: Circa 1850

EVEN WHEN ALL LITHOGRAPHERS STILL WORKED ON STONE

SAM'L BINGHAM'S SON MFG. CO. rollers were the standard of quality

Because Alois Senefelder was too poor to pay printers to publish his plays, he accidentally invented lithography in Munich in 1796. But nearly a century passed before lithography became really important commercially.

The "scraper" type of hand press pictured here was general from Senefelder's time through the periods of the great lithographic artists of France and England and Currier & Ives of this country and the lurid "chromos" of the late nineteenth century. The discovery of hand transfers was a marked advancement, and the application of steam power in 1865 to a lithographic press increased maximum production to about 600 sheets per hour.

As lithographers then sought new methods for increasing and speeding output, SAM'L BINGHAM'S SON MFG. CO. helped them with years of experience already gained in serving the graphic arts.

Today, SAM'L BINGHAM'S SON MFG. CO. supplies all branches of the graphic arts trade, through 16 conveniently located factories, with "the right roller right away."

SAM'L BINGHAM'S SON MFG. CO.
MANUFACTURERS OF
PRINTERS' ROLLERS
LITHO-OFFSET ROLLERS

THERE'S A FACTORY NEAR YOU:

ATLANTA 3	DES MOINES 2	KALAMAZOO 12	OKLAHOMA CITY 6
CHICAGO 5	DETROIT 10	KANSAS CITY 6	PITTSBURGH 3
CLEVELAND 14	HOUSTON 6	MINNEAPOLIS 15	ST. LOUIS 2
DALLAS 1	INDIANAPOLIS 2	NASHVILLE 3	SPRINGFIELD, O.

1847-1947
ONE HUNDRED YEARS OF ROLLER MAKING

PRINTING EQUIPMENT *Engineer*

Volume 74 Number 4

A technical publication for the mechanical executive responsible for printing production, equipment and supplies in the commercial, magazine, private plant and daily newspaper field.

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ATF-WEBENDORFER

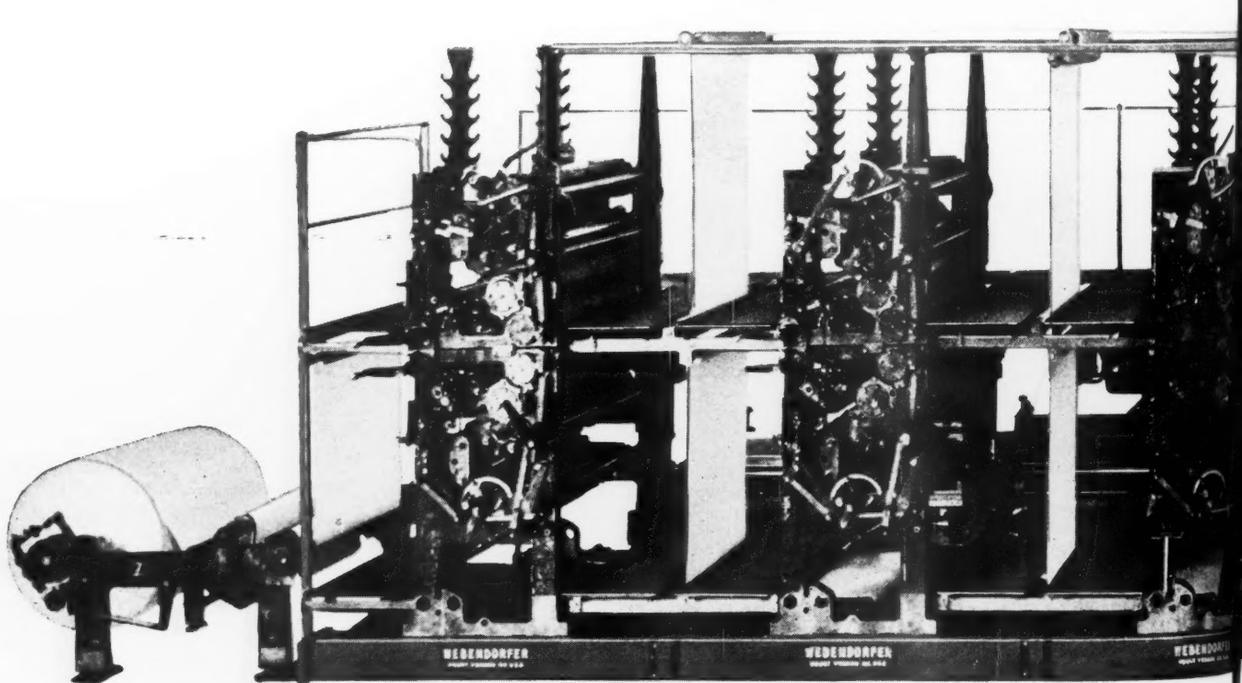
From this press you can get:

One 16-page newspaper, one color each side, 17½x22¾ inches

One 32-page tabloid, one color each side, 11⅜x17½ inches

One 8-page newspaper, two colors each side, 8¾x11⅜ inches

One 32-page signature, two colors each side, 8¾x11⅜ inches



AMERICAN TYPE FOUNDERS

newspaper style multi-color web perfecting offset press

for Newspapers, Tabloids,
Shopping Guides, Magazines, Comic Books, Direct Mail,
Flat Work (including Wrappers, Posters, Broadsides)

One 8-page newspaper, 4 pages 3 colors each side, and 4 pages one color each side

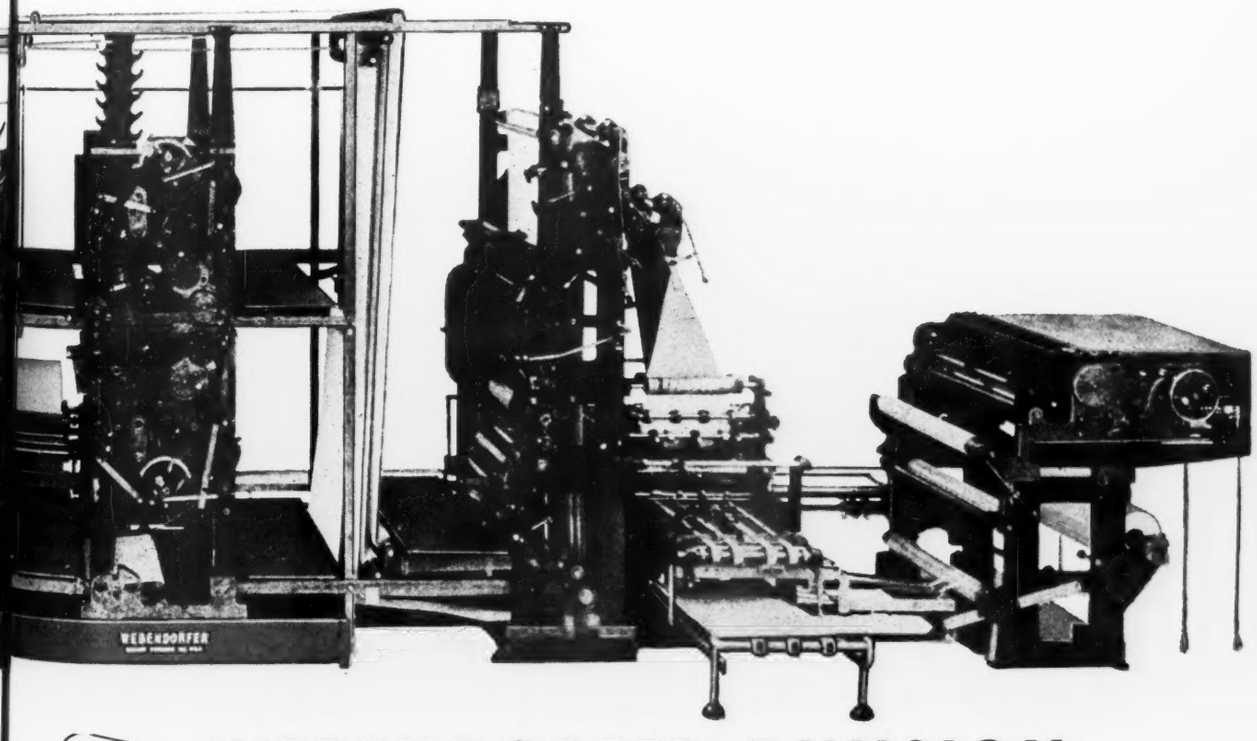
One 16-page tabloid, 8 pages 3 colors each side, and 8 pages one color each side

One 32-page signature, 16 pages 3 colors each side, and 16 pages one color each side

One 4-page newspaper, 4 colors each side

One 8-page tabloid, 4 colors each side

One 16-page signature, 4 colors each side



An ATF Associate

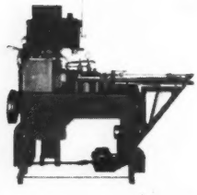
WEBENDORFER DIVISION

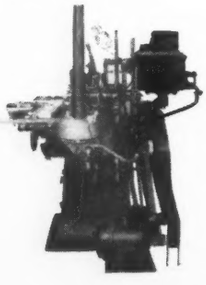
2 South Street, Mt. Vernon, New York

Here's an ad our customers wrote:

Survey Shows
"NO METAL PIGGING"
Is No. 1 Feature of MONOMELT

MONOMELTS eliminate furnace melting and metal pigging. That is the No. 1 reason why MONOMELT-equipped shops like them, according to a recent survey. But that is only *one* of the reasons given. Look at some of the others:





"Monomelt takes care of type metal—doesn't burn it out."

"Gives machine pot a constant temperature."

"Provides sharp, solid slugs."

"Keeps metal cleaner than pigging does."

"Gives better machine performance."

"Makes it unnecessary to fill machine pot every few minutes."

Every printer and publisher interviewed agreed MONOMELT is a great time and money saver. WRITE TODAY for illustrated bulletin that shows how you, too, can put MONOMELT to work in your plant.

THE
MONOMELT CO., Inc.

1611 N. E. POLK STREET MINNEAPOLIS 13, MINNESOTA

Contributions to newspaper production

What turned out to be the greatest single event in the history of paper manufacture . . . a machine which made the process continuous, with sheets 12 feet wide and 50 feet long, rather than the small single sheets created slowly and laboriously by hand . . . occurred less than a century and a half ago. In January, 1799, Louis Nicolas Robert, an employe of the Didot brothers at their famous paper mills in Ensonnes, France, was granted a 15 year patent from the French government.

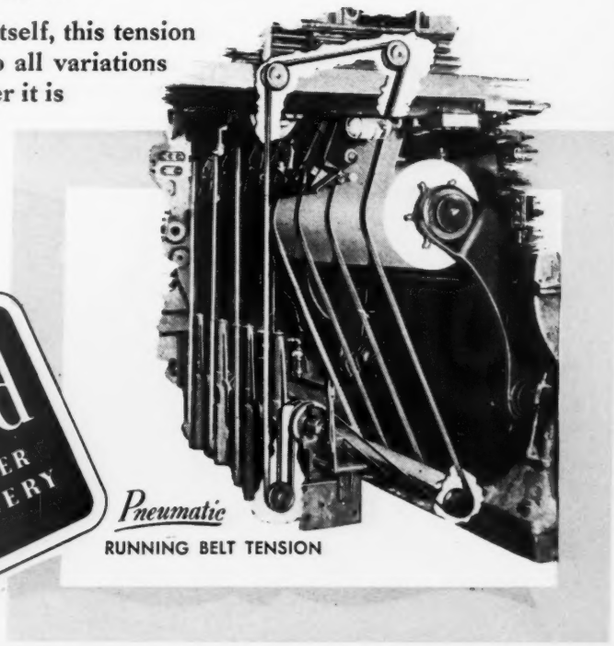
A moving wire screen by which the pulp was carried to a single press, with the drying still done as in the hand process, Robert's machine could have revolutionized the paper industry in France, but neither he nor the Didots, to whom he sold his patent, had the funds to perfect it.

Travelling across the channel to England, Didot interested Henry Fourdrinier, owner of a mill at Dartford, in developing the machine, and making it commercially practicable.

A step of comparable promise in the *feeding* of paper in continuous rolls, followed in 1945, with the introduction by WOOD of *Pneumatic* Running Belt Tensions.

Gentle, flexible, but instantly responsive as air-pressure itself, this tension *controls* the feeding of the roll... automatically adjusts to all variations in press speed... exerts a positive braking action whenever it is necessary to stop the press. In conjunction with WOOD Autopasters, it provides completely automatic web splices at top production speed.

WOOD *Pneumatic* Running Belt Tensions are finding application not only in newspaper and magazine production, but in paper making and converting fields as well. Folder on request.



Wood
NEWSPAPER
MACHINERY

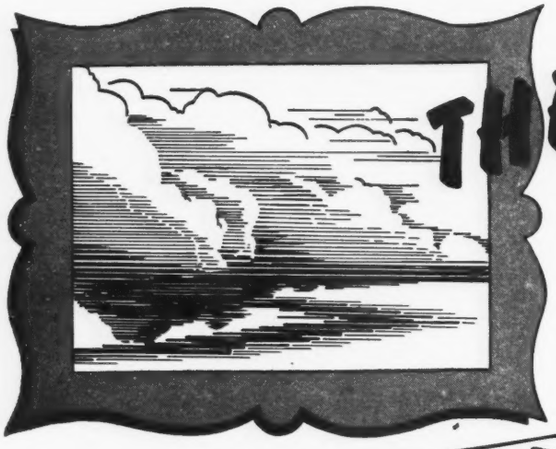
WOOD NEWSPAPER MACHINERY CORPORATION • PLAINFIELD, N. J. • *Executive Offices: 501 Fifth Avenue, New York 17, N.Y.*

WHEN

THE BUSINESS MANAGER SQUAWKS AT FUEL BILLS

YOU'D LIKE TO CUT DROSS LOSSES

YOU'RE SICK OF "NURSING" METAL TEMPERATURES



THEN follow over 200 publishers to KEMP 'immersion-fired' melting

The stereotyper or electrotyper who melts with KEMP "immersion-firing" profits three ways.

First, he saves money in fuel bills. KEMP will guarantee a full 40% saving over existing methods—because electrical power (on the average) costs that much more than gas, and because other gas-fired melting techniques are that much less efficient.

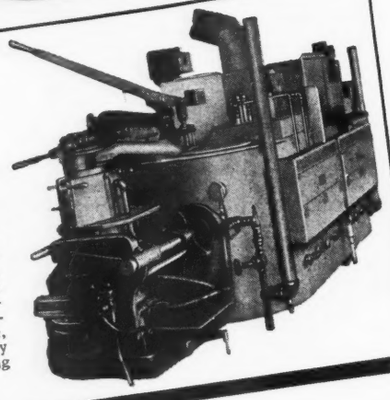
Second, he enjoys better casting results. Metal is held at temperature more precisely. Temperature recovery is more rapid after cold pigs or "tails" are added. The heating units are of large area, and *inside* the pot rather than outside.

Third, he uses less metal — because dross-loss is less. The flue gases resulting from combustion sweep over the top of the molten metal and thereby keep air away.

That's why over 200 publishers praise more than 500 KEMP installations. Let us show *you,* with letters and reports from men you knew well.

THIS POT CUT DROSS LOSSES 18%

...for a large eastern daily which operates two stereo rooms in two plants — one with KEMP immersion-gas-fired pots (like the 10-ton unit shown), the other with electrically-heated pots. Because the spent products of combustion from a KEMP pot blanket the metal, the stereo room on gas boasts 18% less dross per 10,000 plates (15,500 lbs. per year versus 18,250 lbs.). Here's clear-cut proof of just one of KEMP'S five advantages in stereo and electro work: closer temperature regulation, over 500 pots in service, 40% guaranteed savings in energy cost, less dross, better working conditions.



KEMP OF BALTIMORE

PRECISION CARBURETION + ADAPTED COMBUSTION FOR INDUSTRY'S HEAT-USING PROCESSES

ATMOSPHERE GENERATION & ADSORPTIVE DRYER SYSTEMS FOR PROCESS CONTROL AND PROTECTION

JMLco K-GI pe

The C. M. Kemp Mfg. Co.
405 E. Oliver St., Baltimore 2, Md.

Send me your Bulletin IE-10 on Stereotype and Electrotype melting ..... ☐

We cast _____ plates per day. We'd like to save 40%, too. Get in touch with us. ..... ☐

NAME_____

POSITION_____

COMPANY_____

PLACE_____

DIRECTOMAT

Helps Leading Dailies Improve Reproduction Quality

★ **The DIRECTOMAT eliminates stretch of mats... reduces chance of mat buckle... can produce dry mats with the same shrinkage you now get.**

★ **The DIRECTOMAT equipped for double-sided operation has the capacity of two mat rollers... requires the space of only one.**

★ **With the DIRECTOMAT all color work and fine half-tone work can be molded and completely dried...without shrinkage...in a single operation.**

MORE AND MORE leading dailies are installing DIRECTOMAT equipment... and are discovering through actual experience that mats produced on the DIRECTOMAT make it possible to meet the demands of advertisers and agencies for higher quality reproduction. DIRECTOMAT molding not only produces sharper, more faithful mats, but has many other advantages. Nearly 150 DIRECTOMATS are already bringing these and other advantages to leading newspaper and commercial plants throughout the United States and Canada. If you are interested in improving reproduction today...providing for R.O.P. color work tomorrow...write to Lake Erie for complete facts on the DIRECTOMAT.

● Leading manufacturer of hydraulic presses—all sizes and types—stereotyping... plastic molding... processing... rubber vulcanizing... metal working... forging... metal extrusion ... special purpose.

LAKE ERIE
ENGINEERING CORP.
BUFFALO, N.Y. U.S.A.

LAKE ERIE ENGINEERING CORP.
568 Woodward Avenue
Buffalo 17, N. Y.

Offices in Principal Cities and Foreign Countries

TECHNICAL BOOKS

The books listed below may be ordered through Printing Equipment Engineer, 1276 W. Third St., Cleveland 13, Ohio. Because of narrow handling margin, please send remittance with order.

GENERAL

MATERIALS HANDLING—By Harry E. Stocker. This book is of vital interest to mechanical and production executives in printing and publishing plants. While not written specifically as a treatise on materials handling in the printing plant, yet a great deal of its text will be of value in the handling of materials in the plant and out-going shipments from the plant. Bound in light buckram, 309 pages, many illustrations, size 6 in. by 9¼ in. Price $5.35

READING AS A VISUAL TASK—By Matthew Luckiesh, D.Sc. and Frank Moss, E.E. Most important research work to have been published in many years. For printers, designers, publishers, typographers and layout men. Readability of type, type faces, length of line, leading between lines, paper, ink, printing method and lighting are some of the factors involved in ease of reading. Size 5½ in. by 8⅜ in., 428 pages, bound in maroon gold stamped cloth. Price $5.

STANDARD BOOK ON ESTIMATING for PRINTERS—By Fred W. Hoch. Revised 1941 edition. This book is a primer for students and a reference for printers and estimators. Every printing plant should have a copy. Author explains all operations in commercial printing plant and shows production time allowance for each in hours and decimal hours. Size, 6 in. by 9¼ in., 268 pages, $3.75 plus 25c postage and handling.

HOW TO HANDLE COLLECTIVE BARGAINING NEGOTIATIONS—Report based on a survey conducted by the National Foremen's Institute. Points out errors and fallacies which have tripped management in the past and how to avoid these mistakes in the future. Multon binder. 42 sheets, 9½ by 11½ in., $5.00.

HOW TO HANDLE LABOR GRIEVANCES—By Dr. John A. Lapp. Dr. Lapp discusses a practical treatment in the five part manual. Titles of the parts are: Background and History of Grievance Procedures; Grievances and How to Deal With Them; Grievance Procedures in Selected Industries; and Problems of Grievance Procedures. Bound in buckram cloth, 294 pages, 5½ by 8 in., $4.00.

THE ART AND TECHNIQUE OF PHOTO-ENGRAVING—By Julien J. Soubiran. Steps for the production of engravings are explained for the buyer of engravings or those who should be familiar with the process. Described are the types of photo-engravings, surprinting, copy preparation, color progressives, benday values and tone charts. Size 5½ by 7¾ in., 88 pages, $1.50.

GRAVURE

PHOTOGRAVURE—By H. Mills Cartwright. Covers all of photogravure's basic principles in concise and readable language. Rotogravure receives minor discussion but this is generally considered best textbook on photogravure process. Contains 202 pages, 34 illustrations, maroon cloth, size 6¼ in. by 9¼ in., $3.50 per copy.

OFFSET-LITH

LITHOGRAPHERS MANUAL—Compiled by Walter E. Soderstrom. Second revised edition. Technical information from copy to finished job. Nationally known technical men contributed the bulk of practical camera, platemaking and presswork information. Size 8½ in. by 11¼ in. Bound in red cloth, gold stamped. Many of the 368 pages are illustrated. Price $5 per copy.

THE SINGLE COLOR OFFSET PRESS—By I. H. Sayre. The purpose of this book is to offer a detailed technical explanation of the operation of the small single color offset printing press. It also carries recommendations for approved methods of printing technique and press care which apply to all offset printing. Much of the technical operating information applies to all makes of small offset presses.

Section I deals with Harris offset presses.

Section II deals exhaustively with materials used in offset printing.

Section III deals with ATF's Webendorfer single-color offset presses.

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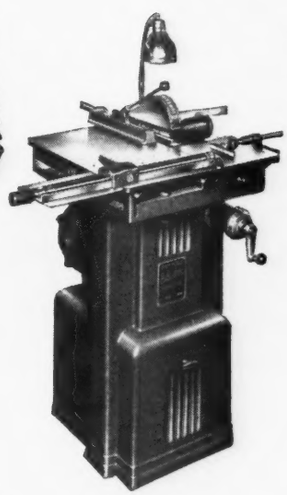

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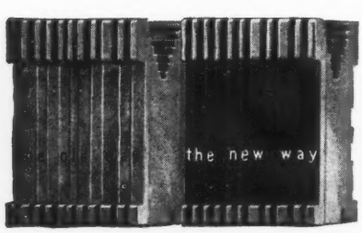

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A Suggestion and a Remedy

[An Editorial]

TIMES have changed. Newspaper technology is up for an overhauling because newspaper business competition is present and increasingly imminent. Production costs have skyrocketed. The newspaper printing industry is somewhat in the position of the man who suddenly finds something gnawing at his vitals—he's going to do something about it quickly. Probably this is a fair and factual statement to those who criticized the recent ANPA Mechanical Conference program in Chicago.

Mechanical and production executives who were disturbed by the lack of opportunity to participate in mutual discussion of mechanical and production problems from the Chicago ANPA Mechanical Conference floor, it appears, will find it expedient to adjust themselves to the new order. It is reasonable to suppose that if the industry itself undergoes an economic change the mechanical and production executive must adjust himself to that change.

Since it now looks as if mutual in-plant trouble-shooting discussions will no longer dominate the ANPA Mechanical Conference programs, the mechanical and production executive ought to accept the situation. His outlet for mutual discussions lies in attendance at the regional mechanical conferences with which the country is well supplied. Simultaneously, he should lend his support to the industry-wide research program because through it his profession will assume greater importance once the fruits of research permeate the industry.

With respect to another group vitally concerned with this new activity, *Printing Equipment Engineer* feels that the equipment manufacturers will go along with the ANPA research program just as they have done in the case of the Lithographic Technical Foundation. Equipment manufacturers have accomplished wonderful results through private research. With their cooperation added to the ANPA program, there isn't any reason why newspaper printing technology shouldn't be advanced immeasurably.

Years ago, one session of each annual American Newspaper Publishers Association convention was devoted to technical and scientific aspects of newspaper manufacture. As time passed, it became evident to the publishers that this sort of program wasn't filling the mechanical and technical needs of the industry. The reason was that the publisher, while interested in the technical side of his business, didn't have the time nor the inclination to keep up with progress in the mechanical operation. He found it necessary to provide a means for educating his mechanical executive personnel.

In 1927, the ANPA Mechanical Department was created. Publishers recognized the need for fully acquainting their mechanical department executive personnel once a year, with the latest techniques in mechanical production through mutual discussion. In addition, manufacturers' experts were invited to participate in the programs from time to time.

During the 20-year career of the ANPA Mechanical Conference, a number of regional mechanical conferences were organized. There are eleven of them and all have been successful. The regional conferences supplied a need which the ANPA Mechanical Conferences could not supply. Frankly, there just isn't any hope that mechanical department executives from metropolitan, medium-size and small newspapers can get together on a completely mutual problem basis. Past ANPA conferences have proved this assertion, if for no other reason than that the programs have been participated in largely by bigger-paper executive discussions. Post-conference criticisms consisted chiefly of complaints that the smaller-paper executive was not on his feet before the microphone even though he was represented in greater numbers in the conference meetings.

The industry-wide picture during this time changed gradually. Just prior to and during the war, competition to newspapers set in and increased. From a nation-wide viewpoint, publishers found something had to be done to curb competitive inroads into their business volume. During the war, also, production and materials costs increased precipitately.

The net result is that the publishers finally recognized the need for a program of cooperative and coordinated scientific research. Now, since the American Newspaper Publishers Association is about to get under way with a research program, it seems inevitable that the complexion of the annual mechanical conferences, too, would have to be changed. The in-plant mechanical executives no

longer will be provided with a national meeting at which their mutual plant problems can be discussed informally among themselves. The major functions of the ANPA Mechanical Department are altered so that members of the mechanical committee will devote the major portion of their committee time to the pursuance of research affairs.

In 1946 at the Pittsburgh conference, Worth Coutney, then chairman of the ANPA Mechanical Committee, charted the future course of the ANPA Mechanical Conference in very plain language. Mr. Coutney's explanation revealed that the ANPA Mechanical Committee's efforts in the future would be devoted primarily to the pursuance of scientific research in the newspaper field. He stated that the ANPA Mechanical Committee wished to encourage the regional conferences and urged maximum attendance by departmental executives.

Essentially, the mechanical executive is concerned with production. His is a manufacturing responsibility; thus, we want to mention the statement made by William Baumrucker, jr., at the ANPA Mechanical Conference in Chicago to the effect that research and production are two entirely different things. It will be necessary for those concerned with research and production to understand each other's language. In addition to supervising the objectives, those concerned with research will report accomplishments to the production men. In turn, no one is in better position to be the determining factor as to what shall be investigated than the production executive. This viewpoint is substantiated by the fact that research must listen to the suggestions of those who are in a position to make them. We're willing to bet that the Mechanical Committee will keep its ear tuned to the goings-on at the regional mechanical conferences. The conferences will be the means of needling the research committee into efforts to study major problems voiced by mechanical and production executives from the regional conference floors. The role of the regional conferences will become more important. *Printing Equipment Engineer* urges all mechanical and production executives to make the most of their opportunities by attendance at and participation in, their own regional conference. Let your voices be heard for the good of the industry. Continue attendance at the ANPA Conference. It is not asking too much of your management to support both conferences.

Patra Method of Producing Electros

INVENTED and developed in Patra Laboratories (London, Eng.) by the research staff, and now freely available to members for use under licence, an improved method is announced of producing electrotypes from wax moulds, using a sprayed-on solution of silver instead of graphite.

Cleanness, more rapid production of electros, and more uniform thickness of the deposited shell are the chief advantages of this process which is described in Patra Bulletin No. 6, 'The Production of Electrotypes from Wax Moulds without the Use of Graphite,' (January, 1947) by P. B. Upton and W. H. Banks, Ph.D., of the Association's research staff.

In the Patra process the wax mould is made as usual, but French chalk replaces graphite as a separating agent. Soft brushing and an air blast then remove loose chalk from the mould, which is subsequently brushed over with a wetting agent (Patralyte No. 1). This makes the wax more readily wettable by the second (silvering) solution. Time: About 30 sec.

The mould is now rinsed in water and dipped in another solution (Patralyte No. 2). This, coming into contact with the film deposited by the first treatment, forms a thin film of metallic silver, which aids the next stage. Time: About 10 sec.

Using a specially designed spray-gun in a suitable spraying booth, the mould is now sprayed simultaneously with Patralyte No. 2 and Patralyte No. 3. These two solutions are fed separately to the spray-gun and ejected separately in fine sprays, which combine some distance from the nozzle. Owing to the film of silver deposited by the second treatment, a thicker coating of metallic silver is now rapidly built up on the mould.

Time: About 15 to 60 sec., according to the area of the mould.

After being washed in water and drained, the mould is now placed in the depositing bath, where a copper shell grows over it in about one-tenth of the time taken with the normal graphited mould. While the building-up of the shell then proceeds at the usual rate, a saving of about ½ hr. in production time on each shell results from the use of this Patra process.

The cost of the materials used in treating the wax mould in the way described is estimated at about load per sq. ft. To protect the interests of members in this Patra process patents have been applied for in Britain and abroad. Free licences to operate the process will be granted to members on application.—*Patra Journal.*

Exhibitors at ANPA Conference

The exhibits this year at the ANPA Mechanical Conference were notable because manufacturers placed actual equipment on the exhibit floor and demonstrated the machines to mechanical executives. Among the "live" exhibits were Morrison Co.'s slug stripper and spaceband polishing machine, Linotype Parts Co.'s metal pot thermostat and other devices, Wood Newspaper Machinery Corp.'s stereo color plate registering machine, Consolidated photo-engravers' Equipment Co.'s photo-engraving camera, Certified Dry Mat Corp. demonstrated the new Raytherm stereo mat shrinker, and a number of other manufacturers demonstrated their new equipment. There were 37 exhibitors.

Acme Press Blanket Co.
American Type Founders
Bingham's, Sam'l Son Mfg. Co.
Birn, Serge A.
Bourges, Inc.
Certified Dry Mat Corp.
Chemco Photoproducts Co.
Consolidated Photo-engravers' Equipment Co.
Dayton Rubber Mfg. Co.
Eastman Kodak Co.
Federated Metals Div. American Smelting & Refining Co.
General Plate Makers Supply Co.
Grout Mfg. Co.
Hammond Machinery Builders
Imperial Type Metal Co.
Lake Erie Engineering Corp.
Lake Shore Electrotype Co.
Linotype Parts Co.
Ludlow Typograph Co.
Mark Specialties Co.
Matrix Contrast Corp.
Monomelt Co.
Morrison, The, Co.
New England Newspaper Supply
Pitman, Harold M., Co.
Printing Equipment Engineer
Richards, J. A., Co.
Robertson, R. R.
Rolled Plate Metal Co.
Rouse, H. B., & Co.
Sta-Hi Corp.
Stereotex Machinery Co.
Teletypesetter Corp.
Tingue, Brown & Co.
United American Metals Corp'n
Vandercook & Sons, Inc.
Wood & Newspaper Machinery Corp.

Results of Research permeate Chicago ANPA

Mechanical Conference—Better newspaper printing in minds of executives—Manufacturer exhibits interesting

By STAFF WRITER

THE largest registration of newspaper mechanical executives and manufacturer and supplier representatives in its history occurred at the ANPA Mechanical Conference held at the Palmer House June 9, 10 and 11. Approximately 1168 persons were registered according to Walter E. Wines, Manager of the ANPA Mechanical Department. This year's program was one of the finest, if not the finest, ever to have been presented before an ANPA Mechanical Conference from the standpoint of progress in newspaper printing.

The twin theme, the necessity for research and the necessity for lessening production costs, dominated the Conference discussions. If anyone had any doubts previous to the Conference that the ANPA Mechanical Department does not have its ear tuned to the times, these doubts were dispelled as the program for the three-day Conference progressed. Predominantly, the program was devoted to the fruits of manufacturer-private research. While the improved methods and equipment largely were manufacturer sponsored yet at the same time the consciousness of the necessity for improving newspaper technology was evident. Considerable progress has been made in mailroom mechanization, printing press drives, first impression printing, simplified color platemaking, color printing, color inserts for newspapers and in the startling development of printing rotogravure color comics.

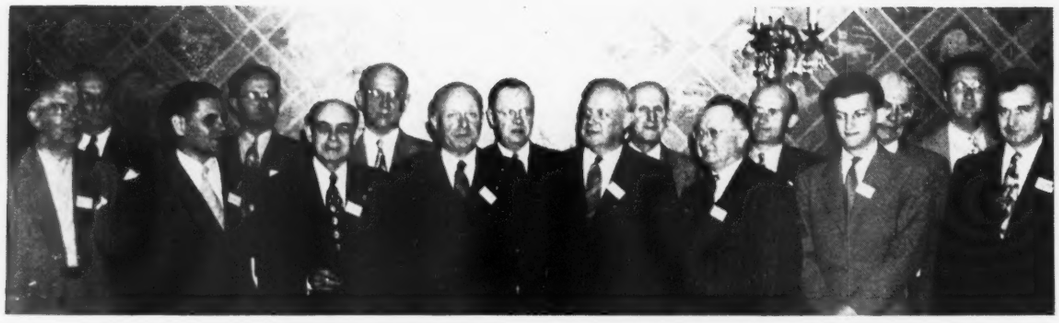
The Conference was opened on Monday morning June 9, by J. L. Stackhouse, Chairman of the ANPA Mechanical Committee. During his opening remarks he discussed the proposed ANPA Mechanical Research Program and advised the audience to be patient and not to expect miracles overnight. He also made an appeal to those mechanical executives who had been associated with newspaper production for a great many years to offer counsel to the young men who are coming up in the ranks, particularly those who have returned from the war and who are now moving into key positions in newspaper production departments.

Mr. Stackhouse then introduced Elbert D. Antrim, Business Manager of the Chicago Tribune and president of the Chicago Newspaper Publishers Association, who gave the address of welcome.

David W. Howe, President of the ANPA and Business Manager of the Burlington (Vt.) *Free Press*, stressed the necessity for mechanical executives devising ways and means of holding down production costs. He said that if any one particular executive could effect a saving of as much as 7% in one department and 10% in another the publisher should feel well repaid. He mentioned that newspaper production costs are up perilously high and that a return to 1945 revenue would put a majority of the newspapers into the red. He concluded his short address with the statement "better printing must come."

William Baumrucker, jr., was introduced next by Chairman Stackhouse. Mr. Baumrucker is administrative assistant to the business manager of the New York *Daily News*. He is also chairman of the ANPA Mechanical Sub-Committee on Research. His report to the executives was a plain and straight forward statement. He presented an outline of the course which the committee expects to pursue in the ANPA research program. Prefacing his remarks, Mr. Baumrucker stated that he felt like the man who had a bull by the tail—he had to do something about it. He also said he felt like the man who had a hot potato in his mouth—the potato is still hot. He stated that research and production are two

ANPA Mechanical Committee meets for luncheon at Chicago conference. From left to right are Walter E. Wines, Manager, ANPA Mechanical Dept.; J. J. Shea, General Production Director, Hearst Newspapers, New York; Maurice A. Hagan, Photo-engraving Supt., Philadelphia *Inquirer;* A. H. Burns, Mechanical Supt., New York *Herald-Tribune;* Edwin H. Evers, Production Manager, St. Louis (Mo.) *Globe-Democrat;* John W. Park, Production Manager, Chicago *Tribune;* Charles H. Ruth, Production Manager, Washington (D.C.) *Star;* David W. Howe, General Manager, Burlington (Vt.) *Free Press;* B. F. Garrity, Personnel Director, Gannett Newspapers, Rochester, N. Y.; R. R. Cranmer, Business Manager, Williamsport (Pa.) *Grit;* Chairman J. L. Stackhouse, President, Easton (Pa.) *Express;* R. E. Lent, Business Manager, Jersey City (N.J.) *Jersey Journal;* F. W. Schaub, Treasurer-Business Manager, Decatur (Ill.) *Herald* and *Review;* William Baumrucker, jr., Administrative Assistant to Business Manager, New York (N.Y.) *News;* John L. Blake, Scripps Howard Newspapers, New York; W. B. Pape, Assistant Publisher, Waterbury (Conn.) *Republican* and *American*.



Seventeen officers and mechanical executives from a number of regional mechanical conferences attended the second annual get-together Monday night, June 9, Palmer House, Chicago. The meeting was called for the purpose of discussing means for regional conference cooperation and to increase the value of such conferences. Clarence Snethen, Mechanical Supt. of the Waukegan (Ill.) *News-Sun*, presided as chairman and was reelected to the chairmanship for another year.
Left to right in the picture are:

1—Wm. F. Madden, President, New England Conference, and Composing Room Supt., Worcester (Mass.) *Evening Gazette*.

2—Howard Colton, Secretary-Treasurer, Illinois Conference and Pressroom Supt., Bloomington (Ill.) *Pantagraph*.

3—Neal E. Dyer, President, New Jersey Mechanical Conference and Mechanical Supt., *Courier-Post* Camden (N.J.).

4—Harold D. Winn, Pacific Coast Conference, and Production Manager, Hollywood (Calif.) *Citizen-News*.

5—Clarence Snethen, Chairman of the meeting. He is past president of the Illinois Mechanical Conference; also mechanical superintendent of the Waukegan (Ill.) *News-Sun*.

6—Vernon G. Eck, Secretary-Treasurer, Northwest Mechanical Conference and Printing Instructor, Dunwoody Industrial Institute, Minneapolis, Minn.

7—Rudolph H. Lent, New Jersey Mechanical Conference; member ANPA Mechanical Committee, and Business Manager, *Jersey Journal*, Jersey City, N. J.

8—Deo A. Padgett, President, Great Lakes Conference, and Composing Room Supt., Cleveland *Plain Dealer*.

9—Edward O. Davies, Pennsylvania Mechanical Conference and Superintendent, Harrisburg (Pa.) *Patriot* and *Evening News*.

10—Walter C. Crighton, Secretary-Treasurer, New England Conference, and Composing Room Supt., New London (Conn.) *Day*.

11—George Holloway, Past President, New Jersey Mechanical Conference and Mechanical Superintendent, Elizabeth (N.J.) *Journal*.

12—Nicholas M. Fellman, Chairman, Pennsylvania Mechanical Conference and Superintendent, Chester (Pa.) *Times*.

13—Joseph A. Dear IV, *Jersey Journal*, Jersey City, N. J.

14—George Fuller, Immediate Past President, Great Lakes Conference and Stereotype Supt., Cleveland *Press*.

15—Jerry Walker, Managing Editor, *Editor and Publisher*.

16—Ralph H. Cranmer, Pennsylvania Conference; member ANPA Mechanical Committee, and Business Manager, *Grit*, Williamsport, Pa.

Present but not in this picture was Theodore A. Serrill, Assoc. Manager, Pennsylvania Newspaper Publishers Association.

Some constructive suggestions were made at the Regional Mechanical Conference Executives' meeting, whereby the regional conferences can be made to function to the maximum extent within their confines. Although everybody present at the meeting didn't agree with the thoughts expressed, yet it seemed that, by and large, the majority in attendance did agree with the suggestions enumerated as follows:

(1) Regional conferences can be used to promote inter-departmental cooperation in the printing plant.

(2) Regional conference can promote greater degree of coordination among departments.

(3) Regional conferences have a duty to perform in persuading some publishers who do not now do so to underwrite attendance of the maximum number of mechanical executives at the conferences.

(4) Annual printed conference reports should be published to prove value of conference and seriousness of intent.

(5) It was suggested by Vernon Eck of the Northwest Conference that manufacturer and supplier representatives be consulted at all times with respect to conference programs and collective "state of mind" of any one conference's membership. They are at all times willing boosters for conference attendance.

(6) It was suggested that officers get together when determining dates so that conference meetings will not conflict with each other or be held too closely together.

(7) Theodore A. Serrill, Assoc. Manager of the PNPA, remarked that newspaper printing is changing into a primary manufacturing task. Therefore, it follows that the newspaper publishing business should seize upon every opportunity to improve its methods with greatest economy of time. The regional conferences can be valuable sources of information respecting in-plant efficiency.

(8) Deo A. Padgett, President of Great Lakes Mechanical Conference remarked that the ANPA is the body to pursue scientific research and the regional conferences can serve the primary function of "shooting trouble" within the production departments of the printing plant.

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different things. Production men are competent to conduct their functions but research is something else again. It will be a major objective of the ANPA Mechanical Committee to bring research and production men together so that they can understand each other and talk the same language, because the language of the research man is not the same as that of the production man. The production man will have to learn the language of the scientist and likewise the scientist will have to learn to talk the language of the production man. "Patience and bucks plus guts and brains make research" said he.

The first thing the committee expects to do is to hire a research coordinator. He will be a fairly young man and a little time will be afforded him to learn the ways of newspaper executives and to learn the industry itself.

Mr. Baumrucker stated to the executives that in this research program the industry is going to have to take a look at itself and the production man will have to accept change when it comes. Research in itself almost never means keeping on with your present method—one must be ready and willing to accept change.

It will also be a duty of the new coordinator to correlate all present scientific and technological knowledge. He will have an immediate acquaintance with new equipment and supplies as they appear upon the market. Research, however, means much more than just the evaluation of new devices and methods. The ANPA research approach will also give answers to practical problems in the way of better, quicker and cheaper ways of doing things. He also predicted that the smaller newspapers will benefit quicker from research development than will the big papers. Research in itself is conducted over a long range program but there will be dividends as the program progresses. He announced that the program will start very soon.

Griswold on Research

Wade E. Griswold, Executive Director of the Lithographic Technical Foundation spoke upon the topic *What Research Has Done For The Lithographer*. His address was an eloquent testimonial as to what scientific research has done for an industry over a long period of years. Mr. Griswold stated that research had brought offset-lithography through the depression from a dollar volume of about $75 million in 1929 to around $300 million annual volume at the present time.

He warned the executives present that research requires understanding of the fact that it deals with intangibles and future problems, that it is not engaged in day to day production and profit operations and therefore cannot be organized or administered or budgeted against a

calendar in the same manner that a corporation in business for profit can and must do.

"There has to be recognition also that research results cannot be forced as toothpaste is squeezed out of a tube—not if worthwhile results are to be obtained. It has to be recognized that certain research projects may be moving rapidly up a certain alley then may suddenly come to a complete stop either through the non-existance of proper technical information to solve the problems or arrival at the conclusion that they cannot be solved at all or that the solutions lie up an entirely different alley. There is no predicting when a research project is started exactly when the results will issue or that they will issue at all."

Without saying so in so many words, Mr. Griswold pointed an accusing finger at the newspaper printing and publishing industry with the following statement: "Look at the financial statements and budgets of the first 50 corporations in this country and see if you can find one that hasn't, for the year 1947, increased its research appropriation by at least 10%, some up to 50%, as insurance for the future, not only in lush but in slack time. All of these corporations have had research programs geared to the needs of their industry for years."

He continued, "It has been our experience that cooperative research helps to highlight the most common and troublesome problem—to stimulate private research — to achieve sufficient standardization and uniformity of production and procedures."

Mr. Griswold related that industries having private research invest 5% to 6%; those having cooperative research invest .2% of sales volume. The Lithographic Technical Foundation is "shooting at" .1% ($1 per thousand) from sales for organized cooperative research.

Newspaper Plant Layout

Robert I. Miller, Manager, Standardization Div., Curtis Publishing Co., discussed plant layout. He stated times are changing and markets are tightening. Therefore, management must look to scientific management aspects of plant layout. In the newspaper plant there is every opportunity for efficient plant layout. In this industry, however, the time element is the big factor which enters into production.

He analyzed plant layout under the three separate sub-headings—What it is, What it does and How it does it. In planning specifications, every consideration should be given to comfort of the human element, freedom of work space, tempered with efficient operation.

One of the pithy observations made by Mr. Miller was to the effect that "material handling adds nothing to the value of the product but it does add to the costs."

Building Planning Service

On Monday afternoon June 9, the second session of the ANPA Mechanical Conference was opened with two co-chairmen presiding. These were John J. Shea, General Production Director, Hearst Newspapers, New York, and W. B. Pape, Assistant Publisher, the Waterbury (Conn.) *Republican & American*. The first speaker was George R. Bailey of Albert H. Wetten & Co., who discussed *Building Planning Service of the National Association of Building Owners and Managers*. One of the principal functions of the Association is to work with the sponsor of a building and the architect, engineer and contractor for the same. He explained the Association's representative would scan completed plans so that the builder could secure maximum efficiency in the building after it had been erected and to avoid any interior construction and planning mistakes which might cost money for alterations at a later time. This service is designed to be helpful to both the builder and the architect. It is not purely a critical function. Mr. Bailey spoke mostly from the standpoint of the arrangement and planning of an office building.

The service is also designed to pass on plans before building erection with respect to maintenance after the building has been erected. He also discussed floor areas, corridors, windows, motors, elevators, etc., with respect to their location.

B. H. Ridder, jr., General Manager of the Duluth (Minn.) *Herald & News-Tribune*, discussed the erection of a building for his newspapers in relationship to the building planning service of the National Association of Building Owners and Managers. He stated that since the burden of newspaper building operation and maintenance rests on the production manager and the mechanical superintendent, the arrangement of the mechanical departments must be OK in all respects. He stated that his organization spent six months visiting plants and making blueprints. The building erected by Mr. Ritter's organization is a large one and is a block long but only partly occupied by the newspaper plant. He de-

This picture was taken at the annual get-together of the Gannett Newspaper group at the recent ANPA Conference, Palmer House, Chicago. John Fields III was host. Seated from left to right are: Bernard F. Garrity, Personnel Director, Rochester (N.Y.) *Times-Union* and *Democratic and Chronicle;* P. O. Roberts, Vice President, William C. Herrick Ink Co.; John J. Fields III, President, Wm. C. Herrick Ink Co.; J. A. Burke, Production Manager, Gannett Newspapers, Inc.; M. C. Pintard, Wm. C. Herrick Ink Co.; John Orlebeke, Foreman Composing Room, Danville (Ill.) *Commercial News;* Russell Towell, Composing Room Machinist, Danville (Ill.) *Commercial News;* Walter G. Leamon, Foreman Pressroom, Danville (Ill.) *Commercial News;* Wm. Spaulding, Foreman Engraving Room, Albany (N.Y.) *Knickerbocker News;* Joe Hebbe, Foreman Stereotype Dept.; Rochester (N.Y.) *Democrat & Chronicle;* and Charles Knapp, Foreman Pressroom, Albany (N.Y.) *Knickerbocker News*.

Standing from left to right are: Walter Marks, Foreman Stereotype Room, Utica (N.Y.) *Press;* Wm. H. Ingram, jr., Sales Manager, Wood Flong Corp., Fred Fleischman, Composing Room Foreman, Utica (N.Y.) *Observer-Dispatch;* Lewis C. Whittaker, Equipment Engineer, Elmira (N.Y.) *Star-Gazette;* George Leyh, Composing Room Machinist, Utica (N.Y.) *Observer-Dispatch;* Charles T. Schultz, Wm. C. Merrick Ink Co.; Earl Hughes, Mechanical Supt., Utica (N.Y.) *Observer-Dispatch & Press;* John W. Strange, Composing Room Foreman, Olean (N.Y.) *Times-Herald;* George Stohrer, Foreman Engraving Room, Utica (N.Y.) *Observer-Dispatch* and *Press;* Joseph W. Addison, Foreman Pressroom, Hartford (Conn.) *Times;* Adrian J. Tyler, Composing Room Supt., Hartford (Conn.) *Times;* Eugene D. Jagerski, Mechanical Supt., Albany (N.Y.) *Knickerbocker News;* and Al Gall, Foreman Composing Room, Rochester (N.Y.) *Democrat* and *Chronicle*.

scribed in detail the getting together and functions of a building committee from all departments in the plant, mentioning especially that the firm engaged the services of Leslie J. Griner now production manager of the Detroit *News*. A seven-man committee consisted of a person from each field who was a specialist in his own field. He stated that the fee charge by the National Association of Building Owners and Managers amounted to only one half of 1% of the estimated cost of the building. It is good insurance against future errors and concluded his address with the statement that "it's a deductable item."

Structural Rubber

Structural Rubber In Vibration And Noise Insulation[1] was the subject of Dr. L. Marick, Structural Rubber Engineer, United States Rubber Co. A summary of Dr. Marick's address is as follows:

"The principal uses of structural rubber are to reduce the transmission of (1) vibration (2) impact shock and (3) noise. All three of these consist essentially of mechanical vibrations of matter. These mechanical vibrations can exist at various rates of repetition, starting from very low frequencies of a few per minute up to the frequencies of sound which begin at approximately 16 cycles per second. They then extend through the entire sound spectrum, which compose the frequencies in the disturbance which we call noise. Historically, a good deal of the development of this application arises from efforts to improve human comfort.

"Disturbing vibrations arising in a certain machine can be prevented from reaching other machines or parts of the building. This is the field which should be of particular interest to executives of the American Newspaper Publishers Association. The beneficial effects realized are the lessening of personal fatigue on the part of the operators as well as the improvement of the performance and life of the equipment affected. These lead to better efficiency of the machine and the operator. In many industries it is immediately reflected in an improved product. A machine which is the source of a disturbance may be insulated so as to prevent the disturbance from reaching other machines or parts of the building, or if a particular piece of equipment is especially sensitive to vibration and shock, it may itself be equipped with the proper mountings to isolate it from the floor on which it is supported.

"It will be of interest to you to know what the mechanism of vibration insulation is. In many instances you will hear the term vibration insulation and vibration absorption applied to the corrective measures which are used in this branch of engineering. In vibration absorption we think of the energy of the mechanical vibration being dissipated in the absorbing material. Under some conditions this is a very desirable property of the material and the energy is converted into heat within it. By far the more numerous solution to problems in vibration insulation is made on a different basis than absorption.

"Any object which is supported by a resilient material causes a displacement or deflection of this material. If the object is supported in such a way as to cause a pull or tension in the resilient material then the deflection caused is one of extension. You can readily visualize the case in which an object is supported by a resilient material in compression. Other means of supporting an object may involve a shear or torsion stress in the resilient material but in any case we always obtain a deflection or change in shape or dimension of the resilient material. If the body supported on the resilient material is displaced from its equilibrium position and then released, the forces which are brought into play will cause the body to oscillate about the position of equilibrium. The frequency of this oscillation, which is the number of vibrations it executes per minute, is precisely related to the original deflection which the object caused in the resilient support.

"*The Condition Known As Resonance.* If the disturbing or 'forced frequency' is maintained, the supported system would increase its vibration amplitude to the point where in many cases the strength of the system is exceeded by the stresses induced by the vibrations. In some applications, the disturbing forces can be very small and usually considered insignificant but when they are periodically applied at the resonant frequency of a given system the latter can be disturbed greatly and even caused to fail. To illustrate, just call to mind the fact that a column of soldiers marching across a bridge are ordered to break step. In order to protect a machine or a device

[1]Dr. Marick demonstrated many of the phenomena with specially constructed equipment and slides in order to permit easy grasping of the idea by his listeners. It is not possible in this limited space to describe the demonstration equipment and the manner in which Dr. Marick handled it.

Some Mechanical Executives and Manufacturer and Supplier Representatives—These men were in attendance at the Chicago ANPA Mechanical Conference held at the Palmer House, June 9, 10 and 11. Total registration was 1136 — largest in the twenty-year history of the Mechanical Department.

1—R. J. Richardson, Production Manager, Memphis (Tenn.) Publishing Co.; John O. King, Sales Manager, Ludlow Typograph Co.; Claude Baker, Composing Room Superintendent, New Orleans *Times - Picayune;* Owen W. Asbell, Southern Manager, Ludlow Typograph Co.

2—At the Wood Newspaper Machinery Corp.'s exhibit, Charles Kirk, Stereotype Supt. of the Detroit *News,* listens to a demonstration of new Wood Stereo Plate Color Register Machine by I. Tornberg, Wood's Vice President. At right side of machine are President Oscar Roesen of Wood; Leslie J. Griner, Production Manager, Detroit *News;* Herbert Stanger, Production Manager, *Christian Science Monitor,* Boston.

3—O. T. Cochran, Secretary, Sta-Hi Corp.; Willis S. Piggius, Sales Engineer, Williamson & Co.; Thomas Caldwell, Stereotype Supt., Cedar Rapids (Ia.) *Gazette.*

4—Patrick Talbot, Publisher, Goldsboro (N.C.) *News-Argus;* A. T. Vanderlinde, Sales Manager, Hammond Machinery Builders.

5—John E. (Ed) Martin, Production Manager, New York *Sun;* Wm. N. Thomson, Asst. Publisher, Milwaukee *Sentinel;* C. H. Ruth, Mechanical Supt., Washington (D.C.) *Star.*

6—John Keating, Production Manager, Milwaukee *Journal;* Tim Ryan, Vice President, International Printing Ink; Charles J. Hentschell, Production Manager, St. Louis *Post-Dispatch.*

7—William Grenier, Manager, New England Newspaper Supply Co.; Miss New England; Dr. L. Marick, U. S. Rubber Co.; W. B. Astor, Jr., Stereotype Supt., Memphis (Tenn.) Publishing Co.

8—P. J. Burton, Production Engineer, Mergenthaler Linotype Co.; Louis Fries, Production Manager, Baltimore *Sun;* A. H. Pruett, jr., Circulation Manager, Charleston (W.Va.) *Gazette.*

9—George M. Stone, Composing Room Supt., Atlanta *Constitution;* C.W. Govier, Production Manager, Buffalo *Courier-Express;* William Roddy, Sales Manager, Metals Refining Co., Div. of Glidden Co.; Joseph Wheeler, Photo-engraving Supt., Atlanta *Journal.*

10—Edgar Flint, Howard Flint Ink Co.; I. J. Moore, Ludlow Typograph representative; Glen R. Hutchinson, Production Manager, Los Angeles *Times;* A. A. McNab, Sales Manager, Howard Flint Ink Co.

11—Ernest Jones, President, Graphic Arts Corp. of Ohio; Val Wells, Production Manager, *Register-Tribune,* Des Moines; Fred Winch, Mechanical Supt., Toledo *Blade;* Eddie Gaughan, Southwestern Representative, New England Newspaper Supply Co.

12—William L. Mattor, Eastern Representative and Ben Sugarman, President of Consolidated Photo-engravers Equipment Co.; Joseph M. Hough, Engraving Supt., Chicago *Tribune;* Meda (Pete) St. Pierre, Engraving Director, Duluth (Minn.) *News-Tribune.*

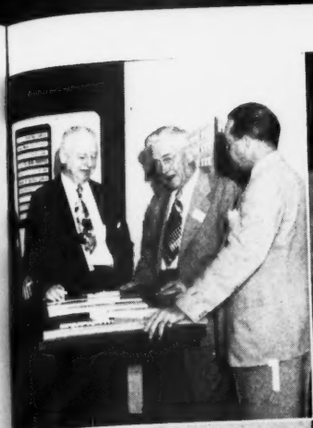
13—Lester Yeager, Production Manager, Indianapolis *Star;* Gilbert Higgins, R. Hoe & Co.; Ellis Speer, Composing Room Supt., Raleigh (N.C.) *Observer.*

14—J. Homer Winkler, Technical Director, Battelle Memorial Institute, Columbus, O.; and Dr. Gerard Larocque, New York *Daily News.*

15—R. B. Huddleston, Advertising Manager, American Type Founders; Ralph Moore, Chicago representative, Intertype Corp.; W. H. Williamson, Sales Representative, American Type Founders.

16—Frank M. Tighe, Executive Vice President, Certified Dry Mat Corp., demonstrating a Raytherm stereotype mat pre-shrinker of the Raytherm Mfg. Co.

17—Richard (Dick) Fitzgerald, Production Manager, Worcester (Mass.) *Telegram-Gazette;* Wm. P. Mulvaney, Vice President, Rapid Electrotype Co., Cincinnati; Reginald Tranter, Production Manager, Boston *Herald-Traveler.*



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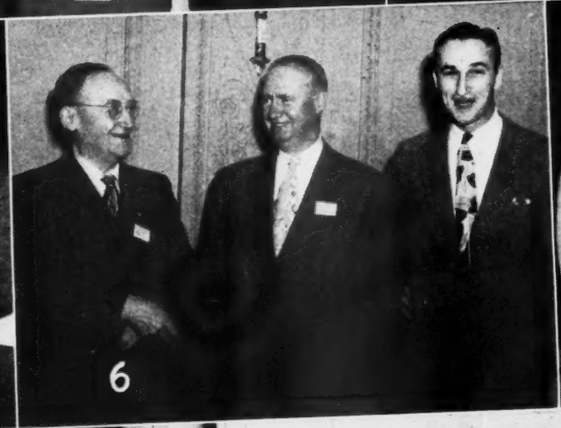

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Exhibit

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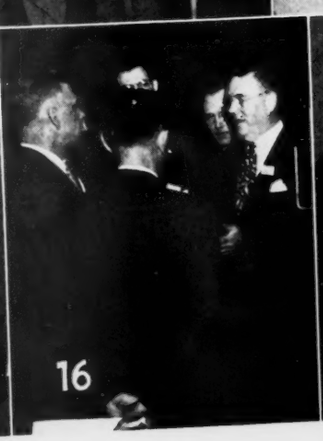

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from a disturbing vibration, the vibration engineer designs a support or a suspension for it which will give the assembly the desired physical characteristics so that it will not respond to the impacts from the disturbing frequency. If he is able to design a support which gives it a natural frequency which is one-fourth of the disturbing frequency then the vibration insulation is about 93%. This in most cases is considered excellent.

"In the early applications of rubber as a structural or vibration insulation material, the technique of bonding rubber to metal had not been worked out. Even today, many applications occur in which the rubber is used in the form of a slab or pad and supports a load in compression. In order to determine the characteristics of a mounting of this type, a set of load-deflection curves has been determined. These have been established from laboratory data and the safe loading and deflections which can be used are shown.

"The term 'mounting' usually refers to a rubber part bonded to metal. This was a natural outcome of the early work, as the convenience offered in installation and the provision of a means of transferring the load stress from the object to the rubber and then to the support was a great advantage. This applies to the situation where rubber is used in compression as well as those cases where it is used in shear. The bond of rubber to metal and the stress to which it is subjected, is an extremely important consideration in the shear type mounting. In one particular example, two layers of rubber are bonded between three steel plates. The load is applied to the center plate and the two outside plates are held by a suitable support. The deflections obtained with rubber in shear are computed in the same manner as for other structural materials with due regard given to the change in the elasticity of rubber as the deflection increases.

"When rubber bonded to metal 'sandwiches' are used in compression, the conditions differ from those present for a free pad.

"An important property which rubber possesses to a greater degree than steel is its hysteresis. This plays a desirable role in vibration absorption at the condition of resonance, because it limits the magnitude of the resonant vibration. Hysteresis refers to the energy absorption upon a complete cycle of deflection. This absorption of energy is also a desirable factor in some applications of rubber in absorbing an impact or a blow.

"It was natural to expect that after a decade of mounting design, we should have accumulated a number of designs which offer the solution to a large number of vibration problems. All of these have a background of good design and have been placed in sufficient installations so that they have proven themselves. They have been assembled in catalogs as standard mountings."

Guarding Against Fire

Rex E. Hieronymus, Aldis & Co., discussed the topic *Guarding Against Fire.* Mr. Hieronymus' address was quite general in nature and he showed by several quotations of statistics, the tremendous losses that occur in this country annually due to fires, a large number of which can be prevented. He stated that in 1946, 10,000 lives were lost in fires. There were 820,000 separate fires in 1946—one-half of which were caused by cigar and cigarette butts. Real losses can occur in the production departments of newspaper plants as a result of ignition of combustible materials. Newsprint rolls are combustible and can cause fires. Ink is combustible if not inflamable; rubber rolls burn readily. Fires can be started by a static electricity and also by acids in the photo-engraving department. Benzol, gasoline, lubricating oil and oil-soaked floors are some of the principal causes of fires.

Mr. Hieronymus leaned toward the automatic sprinkler system for keeping fire losses down. Thoughtful consideration by everybody with respect to fire hazards, would help to wipe out the annual $6 billion losses.

Pleased with the 1168 total Registration—**Walter E. Wines, Manager of the ANPA Mechanical Dept., and his assistant, F. P. Brickner, are snapped by P-Double-E's photographer at the Palmer House, June 11, the last conference day. We might mention that V. R. Spitaleri (ANPA) also felt good about the Mechanical Conference registration, but he was busy elsewhere at the moment.**

Mechanization of the Mailroom

On Monday night an extra session was held for the discussion of mailroom topics. The entire program was devoted to entirely new and proposed mechanical devices for the mailroom. Meeting was presided over by T. A. Corcoran, Purchasing Agent, Louisville (Ky.) *Courier-Journal and Times*, and by Joe Menard, Mailroom Superintendent, Des Moines (Ia.) *Register and Tribune.*

Howard M. Jampol, president of The Jampol Co., presented a movie showing the construction and operation of a newly developed automatic wire newspaper bundle tying machine in practical use in the plant of the Milwaukee *Journal.* Mechanical executives, by means of a film, saw actual mailing room automatic bundle tying, ejecting and delivery into the truck operation. The paper is rolled from a Cutler-Hammer conveyor to a flat belt conveyor at which point mailroom attendants divided the paper into bundles with top and bottom wrapper; the bundles were then conveyed into the automatic wire tying machine where they are tied either with a single or a double wire tie about the bundle and are automatically ejected and conveyed into the waiting delivery truck.

In response to questions from the floor, Mr. Jampol stated that at the present time no price had been determined for this new equipment. The machine will handle a stack of papers 6 in. thick and will go up to extreme capacity of 15 to 18 in. stack of papers. It takes the small and large bundles automatically. In response to another question, Mr. Jampol asserted that except in very rare instances, the top wrapper is not lost before the tying operation. The machine will handle 26 bundles of papers per min. At the *Journal*, as high as 70,000 papers per hr. have been handled by one tying machine. Expressing it another way, it amounts to 700 bundles per hr. with 100 papers in each bundle. It is not at all a difficult problem for the machine to handle from 8 to 12 bundles per min.

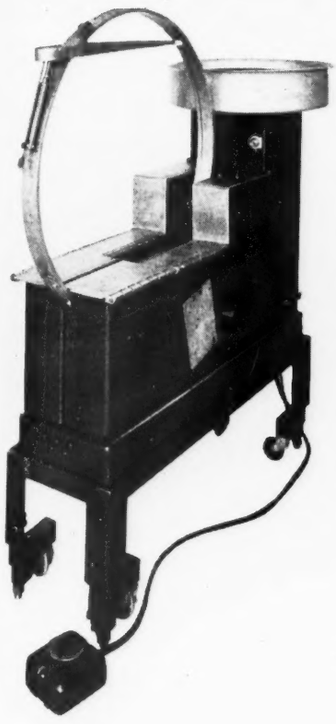
R. A. Frone of the Frone Engineering Co., Rutherford, N. J., discussed a proposed automatic mailing room equipment which he is now developing. The equipment, as explained by Mr. Frone, represents a complete mechanization of the mailing room. Under questioning, Mr. Frone stated that none of this equipment is built as yet but said that machines of similar type have been used successfully under comparable conditions in other industries.

The *Grout Counter Actuator* was explained by K. M. Grout of the Grout Mfg. Co., Wakefield, Mass. The purpose of the *Grout Counter Actuator* is to count accurately the number of newspapers delivered to the conveyor before delivery to the mailing room. The device is intended to eliminate inaccurate count and differences in count between the press and mailing departments.

Model BW Newspaper Wire Tying Machine

Adolph Larsen of the Gerrard Steel Strapping Co., addressed the mailing room session regarding the new Model BW Gerrard Wire Tying Machine for banding newspaper bundles. The machine is semi-automatic in operation. The wire coil is contained in a circular pan or drum at the top of the machine. The wire is fed into the circular track on the drum automatically. The operator places a newspaper bundle upon the table and presses the foot pedal; the machine bands the bundle with wire and automatically butt-welds the bundle of newspapers and compresses the bundle to expel the air from between the sheets.

During the question and answer period, Mr. Larsen explained that the new machine will tie any size bundle and will make 20 ties or more per min. He stated that if necessary, a model could be furnished which would make two butt-weld ties around a newspaper bundle simultaneously. The machine will be leased on an annual basis with service



View of Gerrard Steel Strapping Co.'s Gerrard Electronic Buttweld Newspaper Bundle Wire Tying Machine. One of the machines was exhibited at the recent ANPA Mechanical Conference in Chicago. Adolph Larsen, Vice President in Charge of Sales, demonstrated the machine and explained its operation. Machine is 51½ in. long 21 in. wide and is 64 in. high. Will place a single wire band or two bands at either side around a bundle of newspapers and while compressing the papers will automatically butt-weld the wire ends together. Operation is at the rate of twenty ties per minute. Bundles may be of any thickness.

charges included. He hopes to have machines available during the early part of 1948.

In response to a question, Mr. Larsen stated that if the electric welding unit goes bad during a press-run a new unit could be slipped into place quickly. On the two unit butt-weld tying machine, one of the units can be cut off so that the machine can function as a single tying unit.

Menard Voices Need for Inserting Machines

Joe Menard, Mailing Room Superintendent of the Des Moines *Register and Tribune*, addressed the group of executives on the need for inserting machines. He said these machines were in use in a very limited number of mailing rooms in various parts of the country—mentioning the Milwaukee *Journal*, the Philadelphia *Inquirer* and one or two other papers. He said there is a need for a machine that will do inserting work at from 10,000 to 12,000 copies an hr.

The Teletypesetter

Frank B. Foster, Teletypesetter Corporation engineer, discussed operation of the Teletypesetter for automatic line-slug production. Mr. Foster explained the tape perforating equipment as well as the keyboard operating unit. Of the two types of tape perforators developed he recommended the standard over the multiface unit for newspaper use. Reason is that the standard perforator is simpler, easier to operate and counts accurately.

With respect to maintenance care, he stated the following were essential requirements: Good star wheel and assembling elevator buffer, properly oiled keyboard cams, matrices and magazines must be clean, matrices remain in clean condition longer because they are not handled by the operator, properly cleaned and polished spacebands, pump stop and vise automatic must be kept in adjusted condition, proper tension of the star wheel is extremely important.

Chairman B. F. Garrity wanted to know how long it took to change from mechanical to manual operation. Mr. Foster stated the keyboard would be ready for manual operation as soon as the control knob is turned off.

Mr. Foster discussed what might be considered a new phase of Teletypesetter transmission whereby classified advertisements can be either transmitted directly from the business ad taking counter through a perforating machine operated by the salesgirl or the salesgirl could pass the copy to a Teletypesetter tape punching operator who in turn, would send the punched tape directly from the classified advertising department to the composing room.

Harold Higgins, Composing Room Superintendent of the Detroit *News*, asked whether a system might be created to rout different classifications of copy to different machines in the composing room so that assembly of the type matter could be handled more easily. It was Mr. Foster's opinion that this would be feasible.

Challenger Discusses Ayer Awards

V. Winfield Challenger, Production Manager of N. W. Ayer & Son Advertising Agency, Philadelphia, discussed the Ayer Annual Typography Contest. Mr. Challenger has spoken upon a number of occasions at previous ANPA Mechanical Conferences. His address was enthusiastically received. He related the history of the Ayer Award from its inception in 1931 to the present time and the mechanics of operation. He stated there was no monetary return to his company. Ayer is motivated in conducting the annual awards by a sincere desire to encourage newspapers to produce better newspapers so as to increase reader interest in both advertising and editorial content. Better typography and a better printed paper give the paper a greater chance of being read. In the 1947 contest, 1702 newspapers were sent invitations to participate. Out of this number, 1108 newspapers responded. He explained that the judging of the entries by the committee is an entirely independent procedure free from any agency or outside influence. The ratings guiding the judges' decisions roughly are as follows: Stereotype and presswork, 40%; layout, 30%; typography, 30%.

Leon A. Link, Production Manager of the Cleveland *Plain Dealer*, suggested that in the future the judges give to participating newspapers the reasons for selections and publish them so contestants can profit by them and to stimulate interest in future contests. The suggestion was concurred in by Co-chairman Edwin Evers of the St. Louis *Globe-Democrat*, he asking Mr. Challenger to carry the request back to his (Challenger's) agency.

During the question and answer period, Mr. Challenger said it doesn't make so much difference as to what type face is used so long as it is used well in newspaper typography. He predicted that in the future newspapers will use wider reading columns and will set type in larger faces particularly on the front page.

A Mechanical Feeder for Stereotype Pots

Charles M. Kirk, Stereotype Superintendent of the Detroit *News*, discussed *Mechanical Feeder for Stereo Pots*. By means of a slide shown upon the screen, Mr. Kirk explained an automatic elevating mechanism which carries discarded stereotype plates from waist-high level into the metal pot of autoplate casting machine. This device not only relieves physical strain and fatigue upon the part of the stereotyper dumping plates into the remelting pot, but it also prevents metal splashes and possible physical injury. This device was built by Fred Meyer, master mechanic of the Detroit *News* for Mr. Kirk who has several autoplates equipped with the elevating mechanism. (See May 1946 issue of *Printing Equipment Engineer*).

Constructive Suggestions Presented by Dr. Larocque

Gerard Larocque of the New York *Daily News* presented a very fine paper entitled *Newsprint Quality*. Dr. Larocque's paper contained constructive suggestions for the betterment of newspaper printing and for the control of newsprint quality. He approached the newsprint quality subject from the standpoint of the pressroom and made it appear that the pressroom should keep records and be the means of informing paper mills as to what they want in newsprint. If our readers will excuse the expression, Dr. Larocque said a mouthful when he asked the question "What do we mean by newsprint quality?" Then he supplied the answers from the pressroom point of view: (1) The web of paper should run without breaking and (2) the *surface* of the paper should be capable of printing an attractive picture.

Taking the first requirement, the factor which makes for good running quality is a sheet of high strength. Strength alone, however, can be misleading because a

web break will often occur due to some localized defects such as a slime hole, a calender cut, a poorly made splice or a sliver of wood. A sheet which consists of thick and thin spots when viewed by transmitted light is also more subject to breakage. Such a sheet is said to have poor *formation*. Another unsuspected cause of trouble can be excessive *dryness* of the paper. He stated that mills vary in the dryness of their product. Newsprint can contain from as little as 20% relative humidity up to 50% and 55%. "Other things being equal," he said, "we have found that the drier sheet will break more often in the press." Insistence by the pressroom upon a moist sheet will cause no disservice to the paper mill. Such a sheet, although somewhat more difficult to manufacture, results in a corresponding saving in wood fiber and in some increase in paper machine efficiency.

In his advocacy of the plan whereby the pressroom can help the mill produce a better running sheet of paper, Dr. Larocque recommended (1) keeping a record of all web breaks, forwarding to the paper mill, the serial number of the defective rolls and any evidence of defects such as slime holes, calender cuts, etc. The serial number makes it possible to tie in these breaks with the mill records and to locate the reason for the paper's unsatisfactory behavior; (2) in order to observe the long term trends and to check before it becomes too serious, any increase in the number of web breaks. It is desirable to keep a separate record for *each* paper mill and for each month calculated in terms of breaks per 100 rolls of paper.

The second aspect of Dr. Larocque's discussion of newsprint quality consisted of the factors which make for a good looking picture in the paper. "First," he said, "the surface of the sheet must, under the printing press, become sufficiently smooth or level so that the image which is on the plate will be completely transferred to the sheet, free from white specks, mottle or other blemishes." He stressed the requirement of levelness of the sheet at the moment of printing under the full printing pressure.

Consequently, a soft bulky sheet or one that is thick is more desirable than a hard tinny sheet of equally appearing smoothness. He mentioned instruments for measuring newsprint smoothness and the softness of the sheet.

Stressing the testing and measurement of newsprint quality in the pressroom and passing it onto the paper mill, the speaker said that these tests make it possible to determine why one newsprint prints better than another. Aside from the foregoing determination, the keeping of proper records of quality variations is also possible to determine whether the falling off in the appearance of the printing is due to paper or to some other factor such as plates, blankets or engravings.

"The second requirement for good printing," said the speaker, "is an *absorbent* sheet so that the newly deposited ink film will dry *rapidly*, with a minimum of offset at the second impression and a minimum of smudging at the rollers, angle bars and folding mechanisms.

"On a modern high speed press the interval between the first and second impression is only ½ sec. or less. During this short interval of time the ink on the first printing should dry sufficiently by penetration into the sheet to withstand offset and smearing at the second printing. We all know that it doesn't and that some offset will take place in varying degrees.

"The important point is that different newsprints vary in this respect. Experience has shown that some sheets will give *less* offset than others. In general, the softer and thicker sheets are the more absorbent. A sheet which has been made on a paper machine equipped with a vacuum drier likewise is more absorbent because of its more open structure. However, these differences in offset are not always easily discernible on a printing press because of other factors such as web tension, ink setting, amount of impression and the like.

"For these reasons", continued the speaker, "a simple test which would accurately measure the ink absorbency of any paper service would be of great help for the production of a better newsprint at the paper mill. At present, no such test is being used."

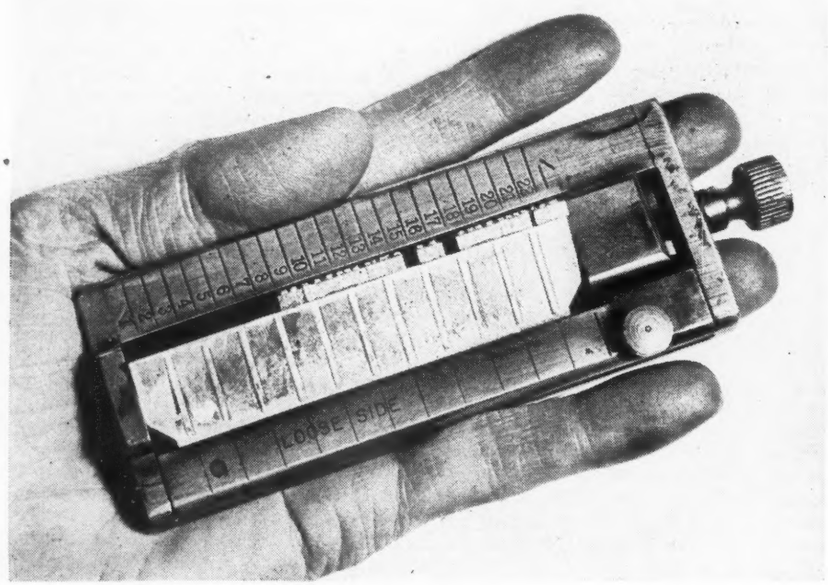
It was Dr. Larocque's opinion that a device is required which will apply an ink film of known thickness onto a sheet of paper at a known pressure and which will then measure the amount of offset which takes place onto a fresh surface (such as a second sheet of paper) after a time interval of less than 1 sec.

The speaker asserted the important point is that some newsprints do print better than others and that even from *the same mill* some rolls will print appreciably better than others. A suitable absorbency test such as that described would help the papermaker determine what are the mill conditions most favorable to absorbency and would encourage him to operate his mill under those conditions.

He suggested that the development of such a testing device would be a relatively simple matter compared to other research investigations and thinks this problem worthy of examination by the new research group of the ANPA.

The speaker conveyed his respects to the future newspaper by asking the question "What role can paper play in producing the better looking newspaper of tomorrow?" When he mentioned a better looking newspaper, the speaker said he didn't mean such a slight improvement in the paper that you would have to bring it over to the window and squint at it several times before the improvement was noticeable. He stated that what newspaper people are looking for is crisp black and white printing, of good tonal quality which will bring the appearance of the newspaper at least half way to that of a good picture magazine.

Continued the speaker, "I may be wrong, but I do not think that such improvement will come from a change in the quality or composition of the newsprint. The reason is that a ton of newsprint costs today, $90 or more dependent upon the location of the newspaper plant from the shipping point. To print this



Rib Support for Initial Letters or Price Figures — When it is necessary to cast an initial letter, short word or price figures on a Ludlow slug, the matrix should be centered over the place where a rib casts on the slug or placed opposite two ribs. The rib or ribs then will give maximum lockup support in the form.

To accomplish this in the plant of the Cleveland Typesetting Co., one side of the stick frame was scored with shallow lines. The scored lines on the stick frame correspond to the position of the ribs on the slug body. In this way, the operator positions the matrix in the stick so the character when cast on the slug will either straddle one rib or will be located centrally of two or more ribs. In the picture, a slug has been locked in a Ludlow stick to show the relationship of the scored lines on the stick frame to the ribs on a slug.

$90 worth of paper requires approximately

Ink to the value of $1.50

Stereo plate amounting in value to 50c and

About $1 worth of press equipment (based upon a press unit costing $35,000 amortized over 20 yrs.)

From these approximate figures the speaker said the point he wished to make is that the cost of newsprint is very large compared to that of the other ingredients in the newspaper. He stated he doubted very much if a newspaper could afford to solely improve the paper without regard to the other elements enumerated above.

He doubted very much if newspaper executives could afford to improve the appearance of the newspaper solely by improving the paper. Technically, it would be relatively easy to make such a better sheet of paper. Coated paper would be expensive and would add at least $5 a ton to the cost of newsprint—perhaps closer to $10 per ton and maybe more.

"The alternative of improving our inks, our plates and our presses is much less expensive and more attractive.

"For instance, doubling the expense for ink might give a real improvement if the quick drying requirement of our printing presses could be met and the added cost would amount to as little as $1.50 per ton of newsprint used.

"The stereotype plate which would be similar in quality to an electrotype or to an original zinc engraving and which would cost twice as much as the present plate, would be only an added 50c per ton of newsprint used. On the other hand, I believe there is little hope of securing anything like the same improvement with the expenditure of $1 or $2 a ton for the improvement of paper."

In the discussion which followed Dr. Larocque's address, Herman Wedemeyer, Pressroom Superintendent of the Detroit *Free Press*, said it is his experience that some mills are known as consistently good producers of newsprint while others are not. He hoped some way would be found for the ANPA, through the cooperation of its member papers, to compile a list to be sent to member papers in which the products of each mill would be classified according to its quality from the pressroom viewpoint. In other words, a system would be set up whereby mills would be graded on the basis of their ability to meet requirements of newspaper printability.

Tuesday Afternoon Session

F. W. Schaub, Business Manager of the Decatur (Ill.) *Herald & Review*, and C. H. Ruth, Production Manager of the Washington (D.C.) *Star*, presided as co-chairmen. A representative of General Electric Co., Cline Electric Mfg. Co. and Cutler-Hammer, Inc., each explained his company's new unit type of electronic press drives. The discussions were extremely illuminating especially since they were illustrated with slides. Motor drives have kept pace with high speed newspaper press improvement.

Progress in Newspaper Printing Ink Manufacture

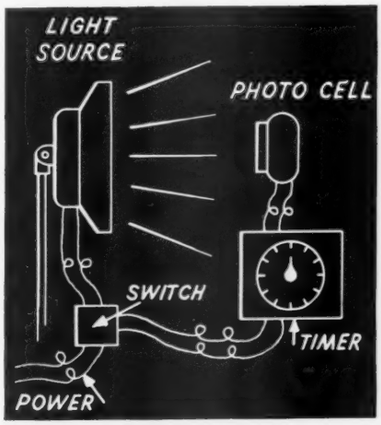
What's New in News Ink? was the subject discussed by W. G. Forster, of the Sun Chemical Co. Mr. Forster stated that the need for a printing ink that would dry rapidly or almost instantly has been the subject of study and research in the ink industry for more than a decade.

Mr. Forster discussed and reviewed the four major physical-chemical groups of printing inks. These are, penetrating inks, oxidizing inks, evaporating inks and the cold-setting inks.

"More recently", said he, "there has been a newcomer in the field of printing inks which has aroused considerable interest as a possible answer to many ink problems. This is a moisture-setting ink and the drying is not based on any of the principles necessary to the four types of inks named above. Moisture-setting inks

Automatic Exposure Meter

ALMOST any source of light for photolithography varies in intensity during an exposure. Variations in line voltages, variations in reflector mediums, and carbon arc fluctuations will cause the intensity of light to be erratic in any given period of time. This makes it apparent that for really exact exposures, merely timing the duration of light is not enough. What may appear to be a momentary flicker of the lamp can actually cause a loss of several hundred units of light. Similar variations from exposure to exposure will result in makeovers, poor dot densities in halftones. To compensate for



Left: A schematic diagram of one type of automatic exposure meter. In some forms, the timer closes the camera shutter rather than turning off the light source.

variation in light intensity, several forms of light integrating instruments have been developed. These are automatic light meters which measure intensity and regulate time.

The cameraman, with this instrument, can get the exact exposure and be sure that the instrument will turn off the lamps or trip the camera shutter when the full amount of light has been delivered. It works equally well in the making of negatives, positives and the exposing of plates. Since this instrument assures an exact amount of light per exposure it is particularly useful in photo-composing multiple images on a plate.

Two trade names for this type of instrument are Totalux and Luxometer.

The photocell unit is placed where the light rays from the light source will strike it. After this position has been decided upon it should not be changed thereafter.

The scale of the timer control scale is marked in arbitrary units (usually 100). A simple way to determine the correct setting for an exposure is to place the timer control at its maximum setting and make an exposure by timing in the customary manner. At the end of the exposure, note the reading on the timer control scale—i.e., if the scale is now at 60 you know that 40 units were required. Thereafter, a setting of 40 will always give you exactly the same amount of light. Some experimentation is necessary to determine the permanent setting.

The instrument accomplishes its work by compensating for the variations in light intensity by adding to or subtracting from the actual exposure time. For instance, if light is lost during a drop in line voltage, the instrument will automatically lengthen the time of exposure. — Published by courtesy of Harris-Seybold Co. from *Harris Impressions*.

are being used extensively in many branches of the Graphic Arts.

"The drying of moisture-setting inks is based on the principle of precipitation and the inks consist essentially of a pigment or pigments dispersed in a vehicle made of synthetic resin dissolved in a high boiling solvent. When a film of ink formed from the resin and solvent is subjected to a quantity of water the binder is thrown out of solution thus 'drying' the ink film. The additional water to set the ink usually is applied by a device which impinges steam at low pressure against the surface of the freshly printed web or sheet of paper.

"The primary motive for the creation of moisture setting inks was to provide an ink and a process that would prevent offset immediately after printing, and at the same time eliminate some disadvantages of other methods of setting ink film.

"The greatest problem in the drying of newspaper inks is the element of time at high press speeds in the range of 1200 ft. per min. This means that between first and second impressions there is approximately only $^1/_{10}$ sec. to accomplish complete drying so that there will be no transfer of ink to the second impression blanket from the freshly printed first impression."

Mr. Forster discussed the running production trials of black and color moisture-setting inks extending over the past two years in the plants of the Chicago *Tribune* and Hearst Newspapers. He stated this work depended upon running moisture-setting inks is still in an advanced experimental stage and his company is not yet prepared to offer these inks generally to the newspaper industry.

In the Chicago *Tribune* plant trials were conducted using black ink on first impression printing at speeds of 3500 imp. per hr. Later trials involved an experimental run using three colors and black.

The speaker stated that more substantial proof of this possibility has been afforded by the extensive trials conducted during the past two years in the Chicago Color Plant of the Hearst organization. These trials involved the use of moisture setting black on first impression and also three colors with black on second impression. The trials on black on first impression have progressed to a point where the ink is being used on production on one unit printing the *American Weekly* continuously. The ink is being dried to such an extent that first impression offset is completely eliminated, the printing is clean and sharp. This press with hard packing and makeready is operating at a speed of about 600 ft. per min. and is being used to produce a newspaper magazine supplement on newsprint paper.

Mr. Forster explained that the moisture setting ink does not have the progressive penetration characteristic of ordinary newspaper inks which often show a bleed through the paper and also causes the paper to be more transparent because of the oil bleed.

The speaker described the equipment necessary for use with moisture-setting inks. "The apparatus for drying this ink consists of a device developed by his company for which patents are pending. The device impinges steam against a freshly printed web, taking up very little space on a press unit. The device consists of a simple asbestos-lined metal box about 4 in. deep, 10 in. wide and as long as the width of the paper web. The moving web forms a cover for the box. Inside the box are two steam pipes each with a series of nozzles; each nozzle sprays steam in a fan-shaped pattern. Inside each steam pipe is an electric immersion heater to superheat the steam and also to prevent condensation within the steam unit. The flow of steam is controlled by a solenoid valve connected into the electric motor drive line so that steam is turned off automatically when the press stops. The electric heaters are controlled automatically by means of a thermostat. Excessive steam is exhausted from the unit by small duct connection with a suction fan. The recommended steam pressure is from 7 to 10 lbs. Electric consumption of the heaters is 50 w. per in. of heater which are only turned on intermittently.

Mr. Forster stated that he and his associates are encouraged by results obtained with this moisture-setting type of ink on trials for newspaper supplement printing. In addition, research in the ink industry is being conducted on other methods. He warned that it is unlikely that any miracle will occur to revolutionize the industry or cure all of its ills overnight, in a month or even in a year. He declared it is inevitable that the absorption type of news ink must be replaced by a different type of ink but the ideal ink for newspaper printing without drying equipment for the presses is still for the future.

In answer to a question from the floor, Mr. Forster explained that a proper installation of moisture-setting ink equipment will not cause heat or uncomfortable conditions in the pressroom. He also added that so far, the experimental runs have not gone above 35,000 imp. per hr. In concluding the answer to these questions, Mr. Forster said "We must learn to creep before we walk."

John J. Shea, General Production Director of Hearst Newspapers, said that to date the tests on moisture-setting ink have been conducted on old press equipment which operates at 18,000 impressions per hr. and the results have been very encouraging; however, new presses have been ordered and for that reason he could not report on new press equipment in connection with ink-drying means.

Charles H. Ruth who was presiding at the time, invited Timothy Ryan, Vice President of International Printing Ink, to approach the platform to discuss IPI's new Vaporin heat-set ink as used in some demonstration comic supplements distributed with the convention copy of *Printing Equipment Engineer* at the Chicago ANPA Mechanical Conference. The supplement presented with IPI's advertisement consisted of four comic sections reproduced from a recent issue of the New York *Daily News* in full color. The first of these was a signature printed with conventional oil news ink on 32 lb. regular newsprint. The second signature was printed with conventional oil news ink on 34 lb. roto-newsprint. Accompanying these two sections printed with oil news inks were two sections with IPI's Vaporin heat-set ink, one of which was on 22 lb. stock and the other on 32 lb. stock. The comparative printing effects between the two types of inks were discussed by Mr. Ryan. He also told how the supplements were printed from the same sets of plates with the necessary changes in newsprint roll and, of course, changes in the ink. He observed that with the new Vaporin heat-set ink for newspaper comic printing, the ink stays on top of the sheet and does not penetrate into it.

Driers and Inks for Newspaper Color Press

Ben Offen of B. Offen & Co., Chicago, discussed driers and inks for a newspaper color press. His discussion dealt entirely with a new type of installation in the plant of the Toronto (Can.) *Star*. At the outset he stated, "While color printing in newspapers is quite good, it is difficult at the present time to increase the amount of ink without experiencing considerable offset. What we would like to see is more yellow, more red, more blue, more black with good clean printing free from offset and smearing.

Mr. Offen then discussed the particular press to which this drying equipment had been applied in the plant of the Toronto *Star*. Mr. Offen feels that the results obtained so far from this experimental equipment have been highly encouraging and satisfactory. During his address Mr. Offen complimented Production Manager, J. S. Atkinson of the *Star* for his courage in going ahead with an installation of this type.

The summary of Mr. Offen's address is as follows:

"The *Star* has a 20 cyl. press arranged to print four webs delivered into one or more folders. A number of combinations are available, but in the main the job at hand is to print two webs—1 and 4 color and two webs in black arranged so that all four webs will run into one folder delivering the paper in two sections.

"The press is set up so that all four webs will be dried when the installation is complete. A drier is provided for each printed side, thus making a total of eight dryers to take care of four webs. Up to the present time, two dryers have been in use on the one and four-color web.

"Every week, a run is made printing heat-set inks on one web, black on one side, four-color heat-set on the other side. Each printed side is run through a dryer. Each web has a dryer for each side. The printed web is run through the drier after all colors are imposed on the sheet; there is no drying provided between colors.

"The one web with heat-set inks on both sides is positioned on the outside of the two sections. Page 1 and the back page of each section carry four colors; page 2 and the next to the last page of each section being printed in black only.

"A number of problems have to be overcome. One of these involves the

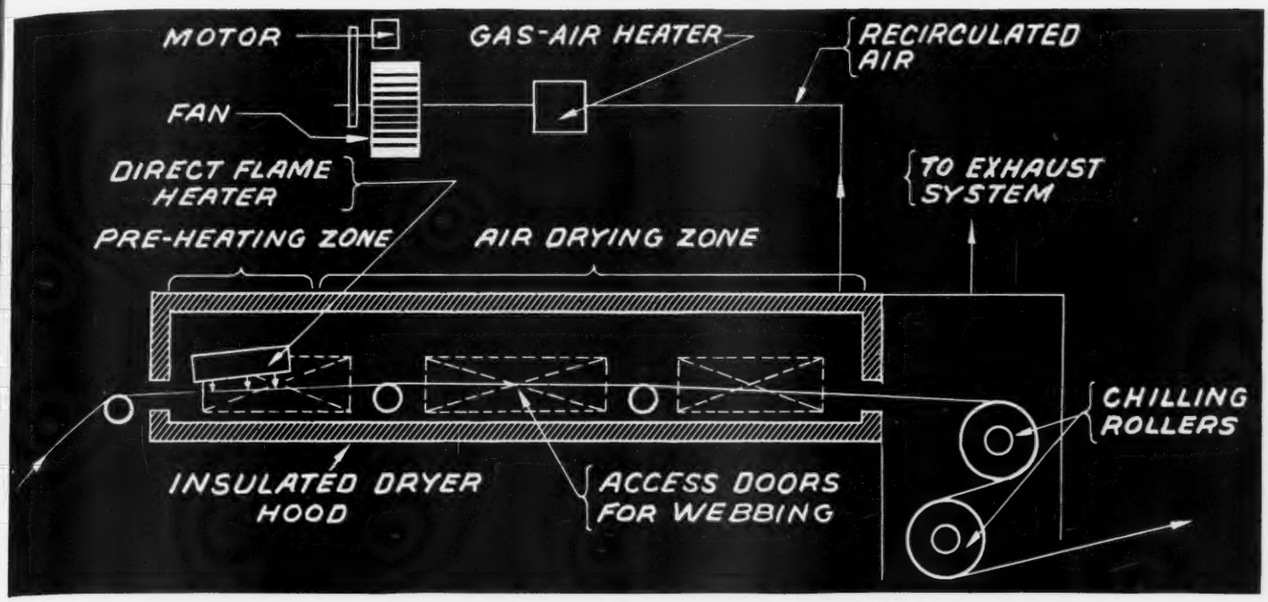


Fig. 1.—Schematic diagram showing one of the Offen ink drier units of the system installed on the color printing press in the plant of the Toronto (Can.) *Star,* with gas flame pre-heating and air-drying zones. Also shown is motor-driven fan for recirculating air through the drying ducts, gas air-heater, exhaust system and the final web chilling rolls. In this particular installation, the overall length of the drying unit is 7 ft., although Mr. Offen stated he has installations going in where the overall length of the drying unit is 10 ft. The speed of the press, number of colors, and the type of paper are factors entering into the drying length.

As the web enters the drier, a flame is projected against the web to preheat it. The overall length of the preheating section is approx. 2 ft. The web in continuous motion then travels into the air-drying section where hot air is recirculated and the real drying of the ink is finished. The heated air is drawn back through the gas air heater which raises the air to the desired temperature. The heated air is then drawn into the fan which discharges the heated air back into the air-drying zone. Any heat liberated by the flame in the drier enclosure is also drawn back and recirculated. Thus, all of the heat that is not absorbed by the paper web is recirculated. Temperature in the drying chamber is approx. 150 deg. to 250 deg. F. After the ink on paper web has been dried it is passed into a chamber containing two chilling rolls. These chilling rolls are approx. 14 in. to 16 in. diam., and chill the paper to between 80 deg. and 100 deg. F. temperature.

As will be seen in this diagram of one of the driers, access doors are provided on one side of the enclosure (two sides if necessary) for webbing the press. The drier is fully insulated with high temperature insulation packed between the inside and outside sheet metal walls of the unit.

selection of ink. Concerning the use of ink, the *Star's* efforts are directed towards trying out different formulations; using a slow ink, a medium fast ink, and a fast ink; an ink with more or less penetration; an ink with more or less varnish; an ink that will require more or less heat.

"Some copies look better than others. This is due to the type of ink, the amount of varnish in the ink, as well as the type of copy for the particular issue. On all jobs there is considerable color intensity. The delivered product is rub-proof and the black is particularly sharp. The type is very good especially when compared with the other sheets on which they did not use heat-set ink.

"The operating men feel that when all webs are put through the dryers, the tension problem will be eliminated or reduced to a negligible amount.

"With reference to ink stability on the press, this to date has not developed into a serious problem. Another point that bears watching, is the compensation of the web between colors. The compensating roller is on the wet side. In the earlier copies, offset from the compensating rollers was experienced. Due to changes in the ink formulation, this offset has been considerably reduced. In fact, the last two or three runs have shown practically no offset. The product is really coming off very clean.

"The runs, as I have indicated before, have not been for long periods. However, runs have been made for several hours without cleaning the compensating rollers.

"This installation is designed to take care of a wide range of developments in ink formulations. Separate thermostatic control is provided to select any desired temperature for each drier. This is advisable since you may be running a light color and black on one web and a heavy four-color on another web. It is advisable to be able to select the minimum heat required for each particular web. Once the drying equipment is prepared for service, the starting and stopping of the drying apparatus is entirely automatic.

"After the web passes through the drier, it is brought in contact with chilling rolls. This sets the ink and makes it hard and rub-proof. There has been no scorching of the web. In fact, the printed web through the dryer looks whiter than the other webs not run through the dryers. This, I think, is largely due to the elimination of the penetrating oils which give transparency to the sheet.

"Standard newsprint is being used for this job. There have been some tests in which a whiter newsprint was used and an appreciable improvement was shown.

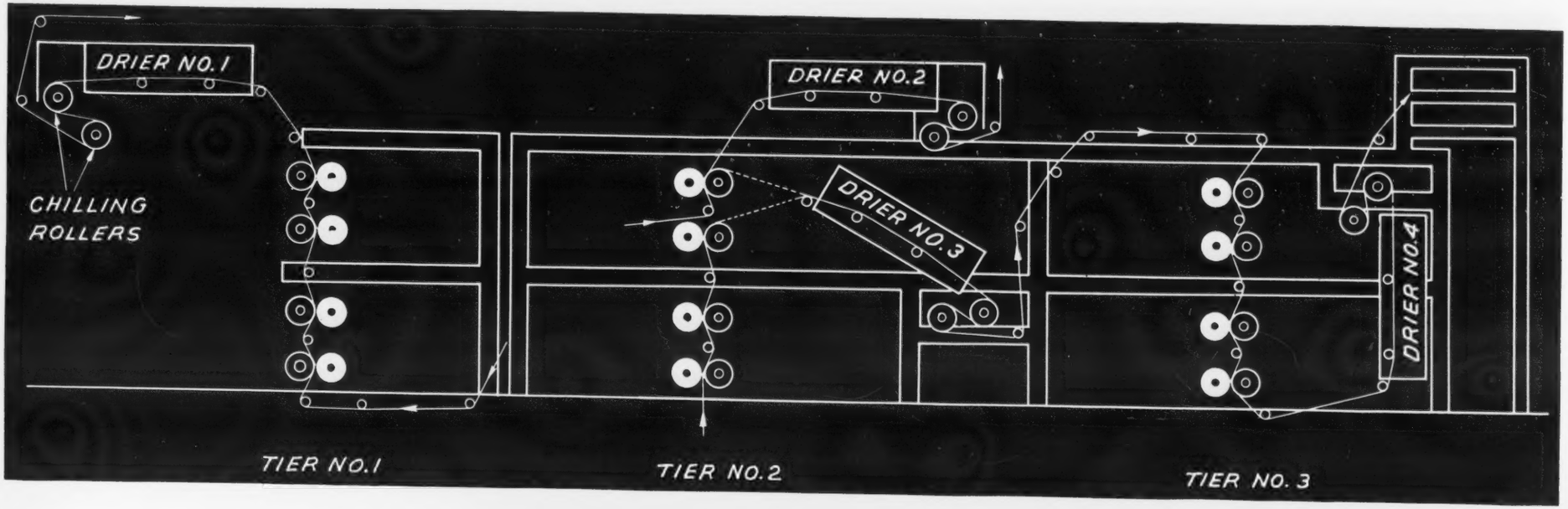
"All of the runs were made between 18,000 to 25,000 copies per hour. Due to the lack of press time, the runs could not be extended beyond 2 to 4 hrs. since considerable time was given up to trial and error adjustments. When the entire installation is complete, no time will be lost in putting all four webs, with heat-set inks, through all eight driers."

Mr. Offen described the drying ducts which are 72 in. wide which is 1 ft. wider than the paper web. The equipment is called multistage dryer. Hot air supplied from a remote gas heater is circulated through the dryers. The used air is pulled back to the heater, is reheated and recirculated again.

Mr. Offen explained that when the speed of the press goes up to 15,000 impressions per hr. a pre-heater is automatically thrown into action to supplement the drying effect at increased speed.

In response to a question, Mr. Offen explained that so far no fires have occured at the *Star* plant. There is a fire hazard anytime the temperature rises above 300 deg. F which is the scorching point.

When the paper leaves the drier at a temperature of 200 to 300 deg., it is passed between two 14 in. diam. chilling rolls. These rolls are water-cooled. Water enters centrally in the shaft of the roll and is thrown by centrifical force against the inner-surface of the shell, thus providing a wall of water approx. ¼ in. thick against the inner-surface of the roll. City water at a temperature of approx. 50 deg. is used.



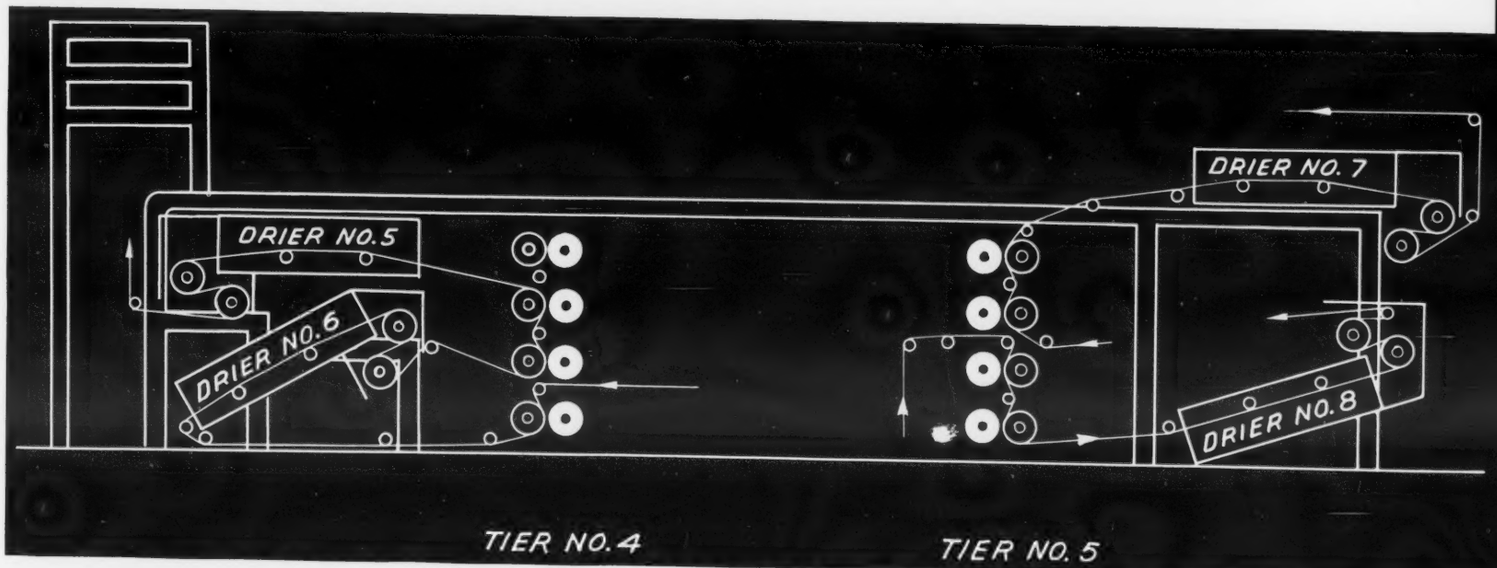


Fig. 2—At the recent Chicago ANPA Mechanical Conference, B. Offen, of B. Offen & Co., discussed *Driers and Inks for a Newspaper Color Press*. The installation described was that of the Toronto (Ont.) *Star*, although Mr. Offen has other installations in process. This diagrammatic side elevation presentation of a combination flame and heated-air drying apparatus for a newspaper color printing press shows only one web lead.

Many other combinations are possible. Special inks are used. At the present time, Mr. Offen says one of the problems is the formulation of the heat-set inks which will give best results. On all jobs printed so far, he stated, there is considerable color intensity. The delivered product is rub-proof and the black is particularly sharp. All of the runs made with this equipment at the *Star* have been between 18,000 and 25,000 copies per hour.

Salvaging Newsprint for Small Newspapers

W. B. Sandlin, Production Manager of the Miami (Fla.) *Herald*, spoke upon the subject *Salvaging News for Small Newspapers*. He explained how defective rolls are stripped and cut so as to furnish flat stock which are trimmed to newspaper size sheets and are sold to approximately 22 small newspapers in the Miami area.

The roll stock is flattened out, placed in piles and trucked to the paper cutter in the commercial printing department of the plant—here the sheets are cut to

(*Continued on next page*)

size. In this program of supplying paper to the smaller newspapers, the *Herald* was actuated by the desire to be of as much help to the industry in the Florida area as possible.

Wednesday Morning, June 11 Session

Maurice A. Hagan, Photoengraving Superintendent of the Philadelphia (Pa.) *Inquirer*, and R. R. Cranmer, Business Manager of the Williamsport (Pa.) *Grit* served as co-chairmen of this meeting. Practically the entire session was devoted to the use of film, making color plates for newspapers and discussions of new engraving cameras.

First on the program, was the new color film presented by the Eastman Kodak Co. The film was entitled *The Use of Ektachrome Film.*

J. W. Lemen of the Eastman Kodak Co. discussed the subject, *Layout and Equipment for a Newspaper Color Studio.*

Color Platemaking Education Continued

Printing Equipment Engineer is glad to note that discussion and instructions for the making of newspaper color plates is being continued. At the Cleveland 1944 ANPA Mechanical Conference, Jack Kelt of the Mallinckrodt Chemical Co. spoke extensively upon the subject and advised newspaper executives to start immediately with experimental work on developing newspaper color plates within the printing plant so as to be ready when the demand came for color advertisements. He advised going through the motions in the regular production manner so the photo-engraving department could become skilled in the making of color plates. At the Pittsburg 1946 Conference, the making of color plates again received attention.

Because this is one of the crafts in which education is needed, we are again glad to note that two speakers explained simplified processes for four-color newspaper printing plate making. The first of these was R. W. Gardner of Eastman Kodak Co. who spoke upon the subject, *Making Four-color Newspaper Printing Plates.* The next speaker was Sam B. Anson, Jr., Chicago office of Chemco Photoproducts Co. who spoke upon *Color Equipment for Newspapers.*

With respect to the *New Engravers' Cameras* which had been put upon the market recently, two speakers discussed their company's products. These were, K. R. Burchard, American Type Founders and W. L. Mattor, Consolidated Photo-Engravers Equip Co.

Automatic Engraver for Making 65-Line Halftones

DUDLEY HOLLISTER of the Fairchild Corporation discussed the Fairchild Photo-Electric Engraver before the ANPA Mechanical Conference in Chicago on Wednesday, June 11. Fairchild Camera & Instrument Corp., Jamaica, N. Y., has perfected a direct photo-electric engraving machine which will be in operation in a limited number of newspaper offices early this fall.

There will be about 30 machines ready for use in September or October, as test units, Hollister said. Fairchild expects to get into quantity production of the engravers early in 1948, after field testing which will be done in newspaper plants of all sizes, ranging from a weekly shop to the largest plant. The three principal news picture services, Associated Press, Acme News Pictures and International News Photos, will be asked to recommend a number of papers for installation of the test machines, but it is expected most of them will be made within 100 miles of New York, N. Y. so they can be constantly checked by Fairchild engineers and service men.

Hollister said it is believed the machines will probably be available on a leasing arrangement, and while first production will go to newspapers, the machines will eventually be available throughout the Graphic Arts industry.

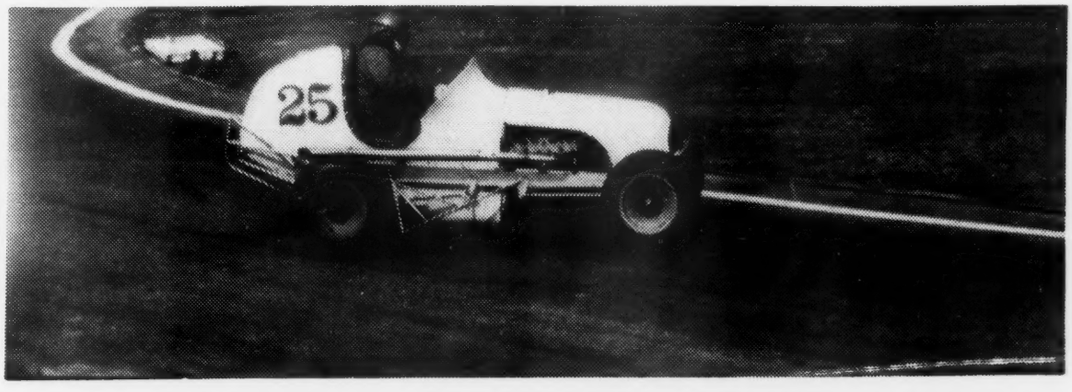
The history of direct engraving goes back about 100 years to the work of a man named Bain who, without the use of photocells and electronic amplifiers, successfully reproduced a picture drawn on a metallic plate.

It remained for Walter Howey, a top editor of the Hearst organization to hit upon the basic principle—the idea that by scanning a photographic print by means of a photo-electric cell, the oscillation of a metal stylus, with a point shaped like a "V", might be controlled, so that when the scanning unit was looking at a light area the stylus would cut deeply, thus removing a proportionately large amount of the printing surface; and when the scanning unit was looking at a dark area, the penetration would be proportionately less so that, conversely, the stylus would remove less printing area.

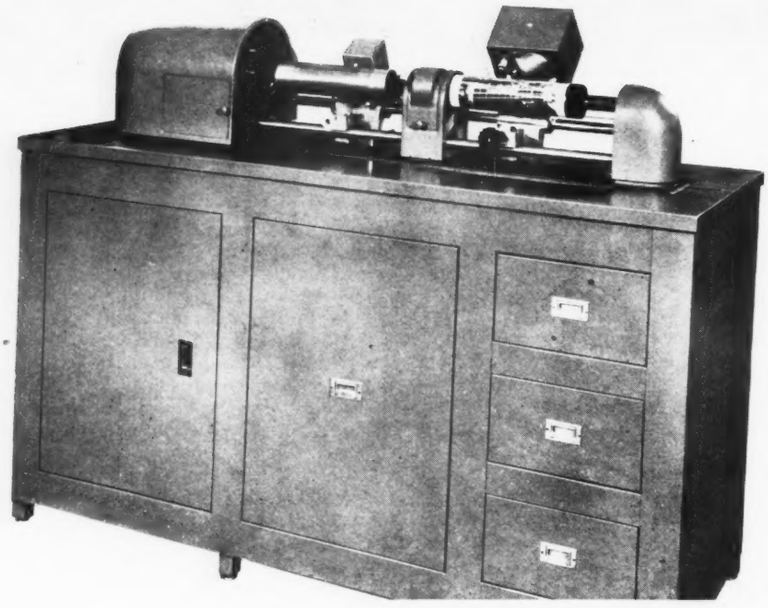
Before Howey's machine was perfected, however, George Washington, of the G. Washington coffee family, developed a device for accomplishing the same things in plastic by a single instead of double operation. But his basic idea was the same as Howey's, and therefore in patent conflict, so Fairchild acquired the patent rights to both machines and after several years of further experimentation and development engineering, has finally completed and operated over a long laboratory test period, the first Photo-Electric Engraver.

The machine involves optics, electronics, mechanics and electricity, but it is claimed to be so simple in operation that good halftones can be produced by any operator after a few hours instruction. The controls are adjusted in respect to the actual tone values of the subject to be reproduced and remain unchanged throughout the engraving process. It produces a halftone screen printing plate of plastic material, which is suitable for letterpress printing. The machines cannot make line cuts, producing only 65-screen halftones. Although a solid black can be achieved there will be the halftone screen over all white areas—and black, too, if desirable—similar to a purposely laid benday screen.

The Fairchild Photo-Electric Engraver in appearance resembles a small screw-cutting lathe of reasonable precision. Its maintenance and operation are also similar to those required by such



This halftone illustration was printed direct from a cut produced automatically on the Fairchild Photo-electric "Engraving" machine. Dudley Hollister of the Fairchild Corporation, explained before the ANPA Mechanical Conference at the Palmer House, Chicago, early in June that the highlight areas of a 65-line screen halftone are 0.007 to 0.008 in. deep and the shadow areas are approx. 0.004 in. deep. It engraves at the rate of 380 holes per sec. The useful area of an 8 in. by 10 in. halftone may be completed in 20 min; a 1 col. halftone 1 in. to 8 in. deep can be completed in 4 min. It was explained from the platform that stereotype molding experience in actual plant operation had been satisfactory.



View of Fairchild Photo-electric Engraver which automatically "engraves" 65 line screen halftones on celluloid or plastic material. A positive photographic print is attached to the right-hand cylinder as shown in this illustration. It is scanned by a photo-electric cell which is contained with the rest of the optical system in a housing just above that cylinder. On the left-hand cylinder a sheet of celluloid or other plastic with suitable properties is fastened, while on the carriage just at the rear of this cylinder is mounted the engraving device. This consists of a heated stylus (1200 deg. F.) ground to a pyramid-shaped point, driven by a magnetic armature so it penetrates the surface of the celluloid by burning small pyramid-shaped depressions in the surface.

a lathe. There are two rotating cylinders and two carriages which are capable of being fed at a fixed rate along the length of the cylinder. To begin engraving, a positive photographic print, cropped or projected to the size of the engraving desired, is attached to the right-hand cylinder. There it is scanned by a photo-electric cell which is contained, along with the rest of the optical system, in a housing just above that cylinder. On the other cylinder, a sheet of celluloid or other plastic with suitable properties is fastened, while on the carriage adjacent thereto is mounted the engraving device, or cutterhead. This consists of a heated stylus, ground to a pyramid-shaped point, driven by a magnetic armature so it penetrates the surface of the celluloid, burning small pyramid-shaped depressions in the surface.

The scanning system and the cutterhead are connected by simple electronic amplifiers so the depth of the depressions formed in the surface of the celluloid correspond to the light and shade of the photographic print being scanned. By tying together the frequency of the oscillation, the line advance of the cutterhead carriage, and the r.p.m. of the cylinders, plus providing a means of backspacing one-half a dot space for each line advanced, the conventional halftone dot pattern is produced.

The engraving, as completed on the machine, is trimmed on what is approximately an ordinary print trimmer, scrubbed under clear water, mounted on wood or metal, and is ready for use in the form. The useful area is 8 in. by 10 in. An engraving of the maximum size can be completed in 20 min., since the linear travel of the carriage is ½ in. per min. This means that to make a 1 col. cut, whether it be 1 in. deep or 8 in. deep, will take 4 min. A number of pictures can be ganged on the scanning cylinder and cut at one time, provided the total keys are reasonably close.

ANPA-AAAA Joint Committee on Newspaper Printing

Four-color Printing The "Webtip" Device
Rotogravure Comic Section

At the Wednesday afternoon session, the last of the Conference, A. H. Burns, Mechanical Superintendent of the New York *Herald Tribune*, and John W. Park, Production Manager of the Chicago *Tribune*, presided as co-chairmen.

The first speaker on the program was J. J. Eberle of the Milwaukee (Wis.) *Journal*, who discussed four-color printing. During the progress of his talk it was revealed that the entire personnel of the *Journal* has become color conscious, including the editorial departments who make use of color in the regular daily edition. In discussing the course of color development in the *Journal* plant, Mr. Eberle related that in 1941 the *Journal* had two presses with reversible cylinders, the rest of the equipment not being reversible. He stated that the new press equipment on order by the *Journal* would be equipped 95% for color printing.

One of the points stressed by Mr. Eberle is that the advertising department of the newspaper must make the advertiser understand that if it can't be sold by black ink, it can't be sold by color.

Mr. Eberle told about the progress in color platemaking and printing at the *Journal* by stating that when color platemaking was first started, the *Journal* was not equipped with a circular screen, it had no image reversers and photo-engravers were without color experience. It was outstandingly apparent from Mr. Eberle's discussion that the entire staff of the *Journal* has worked cooperatively to perfect this r.o.p. color printing. Many staff meetings had been held to help one another. At these meetings the members of the staff were not critical but offered suggestions from one department to another to help improve color printing. Staff meetings are still held.

The next two speakers, Stanley Myers of the Philadelphia (Pa.) *Bulletin* and George B. Dearnley of McCann-Erickson Inc., advertising agency, discussed the recently reactivated *ANPA-AAAA Joint Committee on Newspaper Printing*. Mr. Meyers' address was well presented and well received. Mechanical and production executives seemed to sense the seriousness of purpose of the reactivated committee as reported upon by Mr. Meyers.

A sub-committee was appointed at the first meeting the committee consisting of Ben Dalgin of the New York *Times* and Erwin Miessler of Needham, Louis and Brorby. The committee will prepare extensive exhibits and specifications for art techniques best suited to newspaper reproduction.

Another objective of the joint committee will be to publish standards and recommendations in ready reference format for distribution to agencies and newspapers.

Some of the most important standards objectives of the committee are (1) Correct preparation of original art work to obtain best results in newspaper printing; (2) Elimination of the photo-engraving of type, and the selection of type faces most suitable to today's duplicating processes; (3) Proper preparation of patterns to insure necessary depths in electros, stereos and plastic plates; (4) Review of the matrix shrinkage problem.

Agency recommendations are as follows and are included in the activities of the committee: (1) Newspapers contact agencies direct on mechanical matters—*not* representatives or suppliers; (2) Newspapers inform agencies immediately upon receipt of unsatisfactory printing material, or that which has been damaged in transit. Also prompt notification to agencies when material

(Continued on Page 58)

Booklet Composed by Photo-typesetting

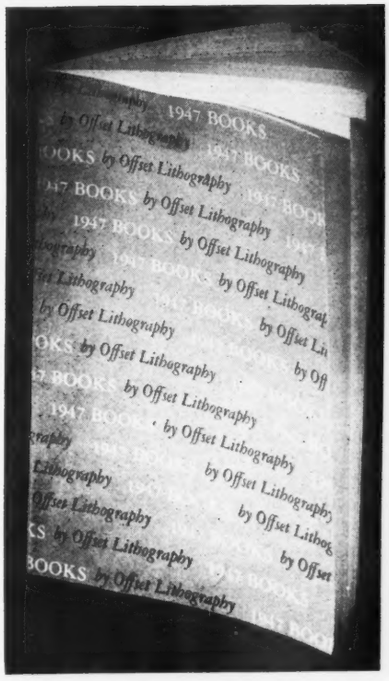
ACKNOWLEDGMENT

"We consider it a privilege to offer this catalog of 1947 selections as one of the first examples of typographic material reproduced by offset-lithography for which the entire composition was machine-set photographically without the use of any metal type. It was lithographed by the National Process Co. of New York on paper supplied by Reinhold-Gould, Inc., New York."

THE acknowledgment reproduced above is quoted from page 2 of *1947 Books by Offset-Lithography*. The booklet (28 pages and cover) was printed especially for the 1947 exhibition of Books by Offset-Lithography in New York early in May.

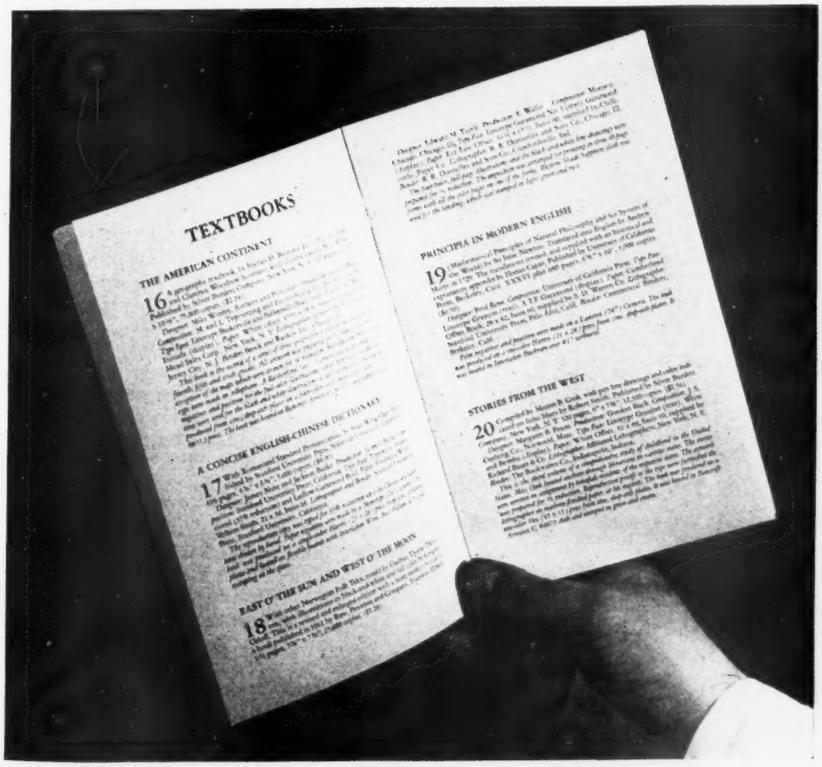
Composition for the booklet was done by photo-typesetting method on an Intertype pilot machine. Production details with respect to plate-making are not obtainable. Technical details with respect to operation of the machine, also are not obtainable.

Composition is done entirely in several sizes of the Garamond series, including italics and small capitals. The type for the cover was Fotoset. Measure for the type pages is 24 picas wide by slightly varying depths ranging from 41 picas to 42 picas. This discrepancy, however, is not prominently noticeable.



Miniature reproduction of cover the type for which was composed on the Intertype Fotosetter. The words "1947 Books" are in white, the words "by Offset Lithography" are printed in red upon a light gray overall background.

Herman Freund, Chief Engineer, of Intertype Corporation, announced at the Atlantic City 1946 annual convention of the International Trade Composition Association, Atlantic City, N. J., last September, that a pilot photo-typesetting machine manufactured by his company would be in operation shortly in the United States Government Printing Office, Washington, D. C. Since that time, no information has been released officially to the press.


TEXTBOOKS
THE AMERICAN CONTINENT
PRINCIPIA IN MODERN ENGLISH
STORIES FROM THE WEST
A CONCISE ENGLISH-CHINESE DICTIONARY
EAST O' THE SUN AND WEST O' THE MOON

Miniature reproduction of two pages of *1947 Books by Offset-Lithography*, prepared especially (as a rush job) for the 1947 exhibition of Books by Offset-Lithography held in New York early in May of this year. The page size of the booklet is 5½ in. by 8½ in., 28 pages and cover. The composition was produced on the Intertype Fotosetter by photographic means. Type was set in Garamond series, in roman with italics and small capitals and bold face in several sizes. Printed by offset.

Branches Out Into Another Industry

Archie Reid, of William Reid Co., 2271 Clybourn Ave., Chicago 14, Ill., announces his firm has developed a milking machine. Our interest in reporting the event is that the William Reid Co. is an old established service firm and is well known to many executives in the printing industry. Consequently, they will be interested in this development. Mr. Reid states that in the new milking machine the usual rubber inflations and pulsator have been eliminated and one can see the actual milking action of each teat.

Colorful Travel Booklets

The Union Pacific Railroad has resumed publication of its colorful booklets to promote western vacation travel. *Printing Equipment Engineer's* purpose in mentioning these booklets is to show how color and attractive printing are being used to stimulate business. The booklets are printed by offset in four colors on 65 lb. stock, size 5¼ in. by 7½ in. Each book contains 32 pages and cover.

The cover of each booklet carries a bleed illustration of a scene pertinent to the region. The title is superimposed within the scene. The back covers have an inward fold-over with an illustrated regional map. The booklets are beautifully illustrated with color reproductions from Kodachromes. Thumb-nail sketches and drawings are used liberally.

The titles of the booklets are *Zion, Bryce Canyon, Grand Canyon National Parks; California; Colorado; Pacific Northwest and Alaska; Yellowstone and Grand Teton National Parks;* and *Dude Ranches Out West.*

To hasten production the printing was distributed among different companies. The R. M. Rigby Printing Co., Kansas City, Mo., printed the *Zion, Bryce Canyon, Grand Canyon National Parks* booklet and the covers for the entire series. Production of the *California* and *Colorado* booklets was handled by the Midwest Offset Co., Chicago; The *Yellowstone and Grand Teton National Parks* and *Dude Ranches Out West* were printed by Poole Brothers, Chicago, and the *Pacific Northwest and Alaska* booklet by the D. F. Keller Co., Chicago.

EQUIPMENT & SUPPLIES

Morrison Slug Stripper

WHAT appears to be the first machine of its kind produced by an equipment manufacturer has been announced by the Morrison Company. The machine is called Morrison Slug Stripper. The purpose of the machine is to strip or cut down Linotype, Intertype, Ludlow, or APL slugs or single foundry or Monotype characters to proper thickness for mounting in open spaces or mortises in metal-mounted photo-engravings (16 ga., 0.065 in. thick), electrotypes (0.105 in. and 0.152 in. thick), or shell stereotype casts (0.152 in. thick). The type slugs may be stripped on this machine for original composition or for making corrections in such lines. When such a line or type character has been cut to any of the above-mentioned thicknesses, it is handled the same as any photo-engraving, electro or shell-cast stereo. It may be allowed to float in its position when laid in the metal base or it may be fastened down on the base with cut cement or two-side adhesive tape, if a particular register position is desired.

The machine is motor-driven, is pedestal mounted and has somewhat the appearance of a composing room saw-trimmer. It is supplied with a standard hard steel saw blade.

Capacity of the machine is as follows: The work-holding clamp will hold any slug without adjustment from a 1 pt. lead up to 72 pt. body, including T-shaped slugs, such as Ludlow or APL, and in any length from a single character to a 30 pica line. When the line has been cut to required gauge thickness by the saw blade, it falls into a round-bottom tray alongside the saw blade.

The adjustable gauge (*5* in the illustration) is graduated in increments of 0.001 in. to set for any thickness of trim—16 ga. high or shell-cast or electrotype thickness. To obtain the proper thickness of trim, the type face of the slug to be trimmed is abutted against a block of type metal (*4* on the swinging arm in the illustration). The swinging gauge arm to which is fastened the type metal block is swung down to horizontal position when a slug is to be gauged for thickness of trim before taking the cut. Originally, the zero position of the gauge *5* is established by taking a cut with the saw off the face of the type metal abutment block *4*. The type metal block *4* is easily replaceable when worn.

Further information about the Morrison Slug Stripper will be furnished by addressing your inquiry either to the Morrison Company direct or in care of *Printing Equipment Engineer*.

Plastile Flooring

A LAMINATED floor tile is being produced by the U. S. Stoneware Co., which is adaptable to offices, photo-engraving departments and other applications. It does not need to be waxed to keep its glossy finish. It is claimed to resist abrasion, offers a non-skid surface even when wet, and to be impervious to photo-engraving acids, oils, grease and cleaning fluids. The top layer is a 3/32 in. vinyl chloride compound. It is laminated under pressure to a 3/32 in. layer of ground cork bonded with synthetic rubber resins. The top layer is fire resistant and the bottom layer is treated to retard fire. The tiles come in sizes 8 in. by 8 in.; 9 in. by 9 in.; or in sheets 35 in. by 35 in. Further information may be secured from *Printing Equipment Engineer*.

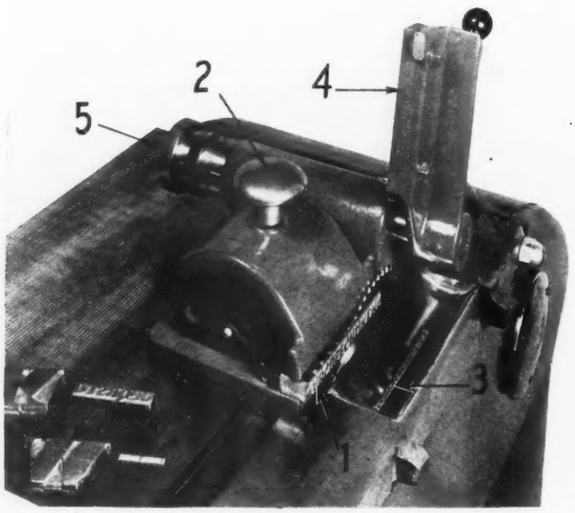
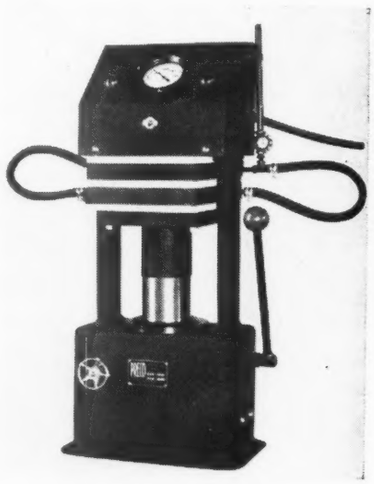


Illustration shows table top of the Morrison Slug Stripper which cuts Linotype, Intertype, Ludlow, or APL slugs, or foundry or Monotype type to 16 ga., electro or stereo shell-cast thickness. At *1* an Intertype display slug is being trimmed to 16 ga. thickness—it has been partly cut by the saw blade. At *2* is shown the knob which causes clamp to hold slug *1*. At *3* is a slug which has been stripped to 16 ga. thickness. Type metal gauging block shown at *4*. At *5* is shown the micrometer gauge adjustable in increments of 0.001 in.

Hydraulic Molding Press

A BENCH-TYPE hydraulic press for molding phenolic matrices, used in the making of rubber stamps and rubber printing plates, is offered by Preco, Inc. The press incorporates a two stage hydraulic hand pump which produces 40,000 lbs. platen pressure. The platens, 8¾ in. by 12 in., are heated by electricity or steam and are water cooled. It is claimed to have accurate temperature and hydraulic pressure controls. Manufacturer also claims the press will complete the mold of any small size of phenolic matrix in a few minutes with accurate reproduction of detail. These phenolic materials may be stored indefinitely and recasts made as often as desired. Further information will be sent upon request to *Printing Equipment Engineer*.



New Stripping Film

A PAPER-BASE stripping film for photomechanical reproduction was introduced at the recent Chicago ANPA Mechanical Conference by the Eastman Kodak Co. Known as Kodaline Ortho Stripping Film, the film is designed primarily for coarse-screen halftones and line reproductions for newspaper work. It is a comparatively "fast" film, and is coated on a tough paper support. The film is claimed to possess excellent dot-forming qualities, which capture the tone gradations of halftone copy and facilitate faithful reproduction. It is also claimed to reproduce high-contrast photographs, as well as delicate gradations of tone which make it suitable for both news and advertising illustrations.

It may be exposed with mercury-vapor lamps. It is supplied in roll sizes, in lengths of 50 ft. in 19 in. width; 150 ft. in 6 in., 9½ in., 13 in., and 19 in. widths. Further information will be sent upon request to *Printing Equipment Engineer*.

Pedestal Mount for Tachometers

PEDESTAL mounts (Type 66) are now available to facilitate mounting applications of Metron Tachometers. They can be used with all Type 52 heads where rotating speed (for full scale reading) is between 100 and 10,000 r.p.m. They are suitable for floor mounting of tachometers on motors, generators, blowers, pumps or any printing equipment.

The head is mounted on the upright column and the column is adjustable in the base to obtain alignment. Four set screws clamp the column in place firmly once adjustment has been made. The head can be rotated in the vertical axis and adjusted up and down. Electrical indicator connections are made through ½ in. conduit fittings to terminals in the base. All parts are adequately sealed against dirt.

View of Metron Tachometer Pedestal Mount. Suitable for mounting tachometers on motors, generators, blowers, pumps or any printing equipment not so supplied.

Heights up to 4 ft. from the base to the shaft center are entirely practical since the tachometer heads are light in weight and the operating torques are low. The minimum height is 3¼ in. so that application is versatile. The base can be mounted on a floor, ceiling, wall, machine member or any other convenient surface.

Further information will be furnished upon request to *Printing Equipment Engineer*.

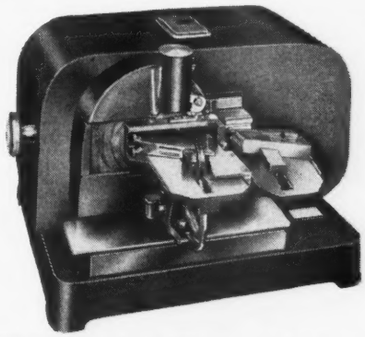
First Canadian Installation

CHARLES H. STOUT, Vice President, Matrix Contrast Corp., has announced the first installation of Matrix Contrast Service in the plant of the Vancouver (B.C.) *Sun*, and at the office of the King's Printer in Victoria, B. C.

Morrison Will Make Spaceband Cleaner

THE Morrison Co. announces it has taken over the manufacture and sale of the FW-45 Spaceband Cleaner formerly made by the Fuller Co., of Schenectady, N. Y.

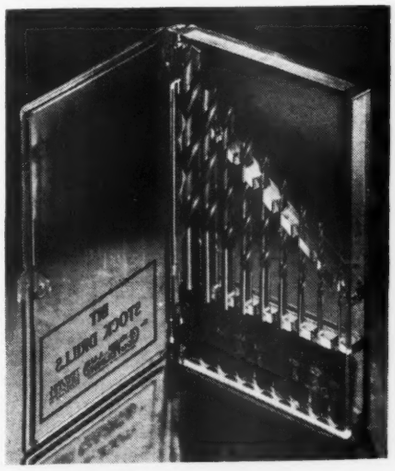
Gerald Fuller, a linotype machinist, developed the FW-45 Spaceband Cleaner and had set up to manufacture it when the war put a stop to civilian production. Since the war ended, Fuller has built a few machines and has now licensed The Morrison Co. to manufacture under his patents. The machine made by the Morrison Co. will be known as the Morrison Spaceband Cleaner.



FW-45 Spaceband Cleaner to be manufactured by the Morrison Co.

Plastic Drill Case

A CASE of clear Tenite plastic contains a graduated set of nine bit-stock drills for Cleveland Twist Drill Co. The transparent plastic shows the contents at a glance. Grooved Tenite retainers keep the drills in position, and the case can be shipped, carried, or stored without danger of breaking the drills. The lid opens on two hinges and is snapped shut by means of a flexible Tenite lug which closes against a small metal pin. Further information may be secured from *Printing Equipment Engineer*.



Portable Fountain Bulletin

A 4-PAGE illustrated folder has been issued by the Capital Tool & Mfg. Co., about its Portable Ink Fountain. Described in the folder is the method of attaching the fountain to different rotary presses, to provide color on any page. Copies of the folder may be obtained upon request to *Printing Equipment Engineer*.

Intertype Maintenance Booklet

SHOPS equipped with Intertype composing machines may now obtain a manual entitled *Tips on the Care of Your Intertype*. The 24-page booklet was prepared by the Intertype Corp., for users to obtain the most from existing equipment. The text includes a brief schedule for the proper care and maintenance of Intertypes. Detailed suggestions and instructions are organized for convenient reference. Copies may be secured from the Intertype Corp. or *Printing Equipment Engineer* will be glad to forward your request.

Ace Hand Trucks

ANNOUNCEMENT is made by the Ace Company of a line of hand trucks for handling crates and boxes. One of the claims made for the design of this truck is the thrust absorber by which the load is carried directly from the nose plate to the frame.

The de luxe model has semi-pneumatic wheels, 10 in. by 2¾ in., for use over rough spots such as curbs, steps and tracks. It has a capacity of 750 lbs. and weighs 40 lbs.

View of one of the new Ace Hand Trucks. Capacity, 750 lbs. Weight, 40 lbs.

There are 18 other models that range in capacity from 350 lbs. to 750 lbs. and weigh from 18 to 49 lbs. Further information may be secured upon request to *Printing Equipment Engineer*.

Booklet on Readability

THE Linotype Co. has issued a booklet entitled *Researches in Readability*. It is a brief discussion of those principles in the design and use of type that make it easier to read. Samples of different type faces and the results of measurement tests on each are given. This well illustrated booklet has 32 pages and cover, is 4½ in. by 7 in.

The research activities were performed by Dr. Matthew Luckiesh in cooperation with the Linotype Co. Copies may be secured from Mergenthaler Linotype Co., or *Printing Equipment Engineer* will be glad to forward your request.

This view of the Cambridge pH meter shows electrode assembly mounted on door of instrument.

New pH Meter

A DIRECT-READING pH meter for measuring acidity and alkalinity is announced by Cambridge Instrument Co. With this meter it is claimed pH determinations can be quickly and accurately made of sample test solutions or the pH of the contents of vats and tanks at various stages in a production process. The meter operates from any 110 v., 50 or 60 cy., a.c. outlet; no batteries are required. Voltage regulator takes care of line voltage fluctuations over range of from 100 to 130 v.

The electrode system is a conventional bulb type glass electrode, completely shielded, which it is claimed eliminates electrostatic interference. It can be used directly in tanks or vats and is not affected by grounded solutions. The entire electrode assembly comprises a glass electrode, calomel electrode, and automatic temperature compensator.

Instrument weighs 10 lbs. Overall dimensions are 7 in. by 8½ in. by 11¼ in. high. Further information may be secured from Cambridge direct or through *Printing Equipment Engineer.*

Using the Potter Electronic Counter to determine the number of folders in a group.

Instant Paper and Card Counting

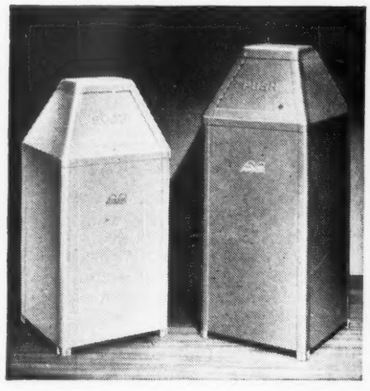
SHEETS and cards may be counted at 1000 per sec., it is claimed, by means of a new pickup used with a Potter electronic counter. The sheets or cards are riffled by hand, using the technique known to printers. The pickups, resembling a phonograph pickup, is moved down the edge of the cards and the count read directly on the electronic counter. The operation is so rapid that the count may be repeated several times to check results.

Paper as thin as onion skin and as thick as cardboard can be counted with this device. It is anticipated that this instrument will find use wherever a hand count of a stack of paper is now needed. The Potter Counter may be used to determine quantities in printing operations, inventory work, counting greeting cards, stationery, in print shops, etc. Further details will be sent upon request to *Printing Equipment Engineer.*

Waste Receptacles

A LINE of waste receptacles with non-rusting stainless feet, has been announced by the Bennett Mfg. Co., Inc. Manufacturer claims the stainless steel feet eliminate rusting and rust marks on tile, linoleum floors. In addition, the feet keep the receptacle bottom off damp floors.

Two independently hinged doors permit both to be opened simultaneously.



Waste receptacles equipped with stainless steel feet.

Doors are equipped with tension springs to keep them closed. Rubber bumpers are provided for quiet closing.

Available in either olive green or white finish. The larger sizes have burlap bags for removing waste. Two models are equipped with galvanized cans for use with water fountains. Further information may be secured upon request to *Printing Equipment Engineer.*

Equipment Installations

The first of two new Goss 7-unit rotogravure presses is being installed at the plant of the Crowell-Collier Corp., Springfield, O. The second press will be installed soon. These two new presses will be used by Crowell-Collier to print *Collier's* and *Woman's Home Companion.*

A Goss Unitube Press is now being installed in the enlarged plant of the Plymouth (Ind.) *Pilot-News.* This new press is a 16-page machine with a full complement of stereotyping equipment. The *Pilot* recently combined with the *News* and is published as one newspaper under the general managership of Samuel E. Boys.

Color Faking by Masking in Letterpress Printing

By James Clyde Porter

VARIOUS pressmen have worked out a color faking process in which masks are utilized for obtaining color from one halftone plate. While it does not completely duplicate color process work it does result in a creditable job and at considerable saving in cost if handled properly. The method is suitable for small runs such as college catalogs, illustrated folders and the like.

In Nashville, Tenn., The McQuiddy Printing Co.'s pressroom foreman, Ross Moores, utilizes the color-faking method by means of masks in letterpress printing.

Ross Moores, Pressroom Foreman, at his desk in plant of the McQuiddy Printing Co., Nashville, Tenn.

The basis of Mr. Moores' method is a single halftone such as would be used for straight printing. Mr. Moores cuts a series of masks—one for each of the colors to be used in the printing job.

After the masks for each color have been cut out, they are pasted to the tympan or cylinder packing top sheet one at a time according to the color represented by a particular mask. When one color of the run is finished, the mask is removed. A new mask for another color is then pasted to the top sheet of the cylinder packing and the press is washed up, as is also the form.

Right here it might not be amiss to indicate that with this color printing method, blue and yellow, for instance, are used to produce green by imprinting one over the other. No green mask is cut but the green color is produced by overprinting the yellow mask on the blue halftone area.

Leave it to Interested Pressman

It should also be stated that responsibility for producing an effective color job by this method should be left largely to the pressman. The method has its limitations. The results to be secured are entirely dependent upon the skill of the pressman and the interest he takes in his work.

Mask Material

The masks are cut from 0.020 in. coated cardboard. Enough of the packing is removed from behind the cylinder packing to compensate for the extra thickness of this cardboard. As many press impressions on the 0.020 in. cardboard of the halftone cut are made on separate sheets as there are colors in the finished job. In making these impressions on the cardboard it is better to make more than will be needed so that in case some are spoiled in cutting the masks, there will still be enough on hand to make the required number.

Cutting the Masks

When the printing of the cut on the cardboard sheets has been completed, the next step is to decide what portions of the cut are to be produced in the colors to be used in the printing job. This can best be done color by color, cutting the necessary mask for each color as the decision is made. The cutting of the masks is done with a pressman's overlay knife. Perhaps a practical example will make the cutting of these masks more easy to understand.

If the halftone cut to be done by multicolor faking is a landscape, for example, it naturally follows that a part of the sky at least will be in blue. It might be that the sky in the halftone cut to be printed in color will have some white clouds which, of course, will not be printed in blue. In addition, any grass and the foliage of the trees in the halftone will be in green which is made by a combination of blue and yellow. In addition there might be a girl with a green dress. The idea is to go over the impression of the cut carefully and decide what will be blue and in the case of the blue mask, what will be green, too, since green will necessitate the use of blue ink to produce it.

When the areas that are to be blue and green have been decided upon, what amounts to a hand-cut overlay is made from one of the cardboard impressions of the cut. In making this hand-cut overlay, all parts of the cut that are not to be produced in either blue or green are cut away and discarded from the mask.

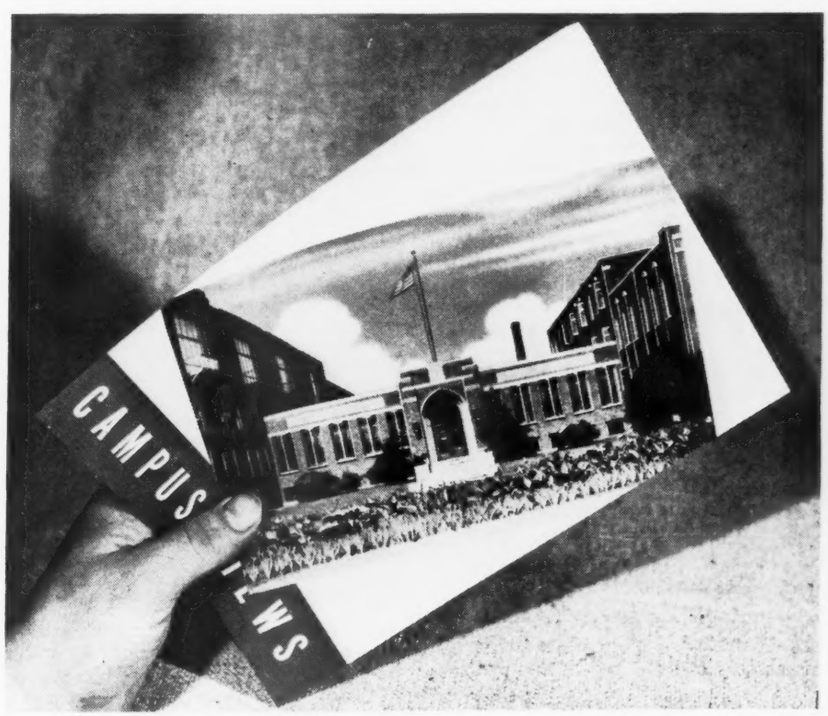


Fig. 1.—Miniature reproduction of page from *Campus Views*. It was printed letterpress by the color faking method. Printed in the shop of McQuiddy Printing Co., Nashville, Tenn. The original size of the page is 7¾ in. by 10¾ in. The halftone measured 8¾ in. wide by 6⅛ in. deep. The brick buildings appear in red, the grass is green and the sky is blue. This illustration was printed in color including the black from one halftone plate. Color process inks were used, the color being printed over the first-down black impression. The cut was locked in the form with other engravings and type matter in the usual way and was printed on a 22½ in. by 35 in. white enamel sheet. There were 33 halftones in the two forms, two of which were in color.

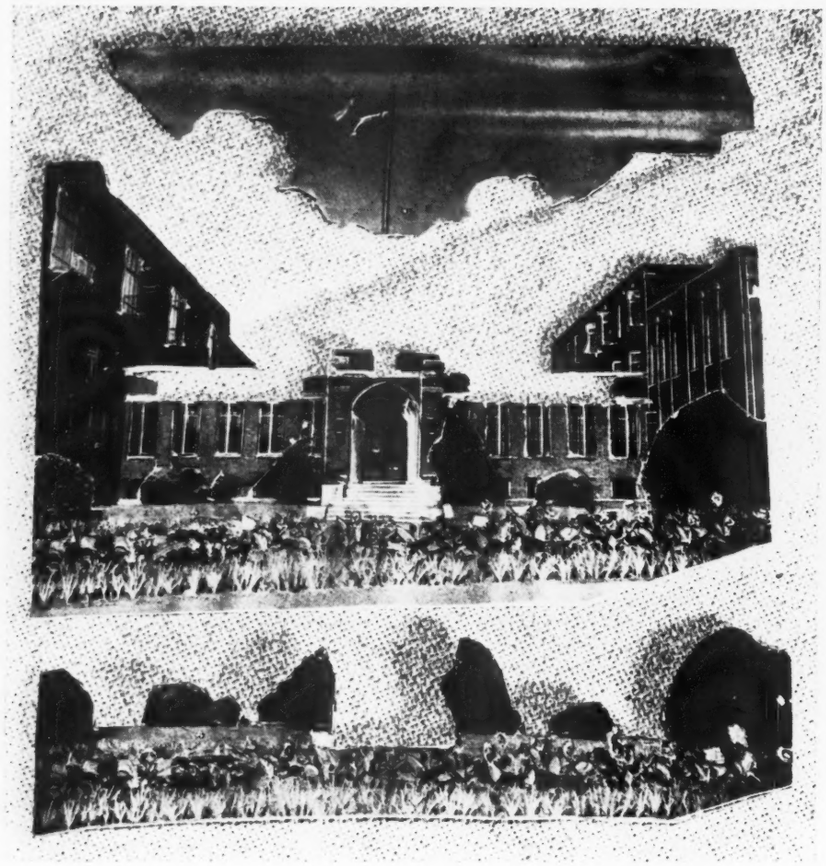


Fig. 2.—Photographic reproductions of color masks pasted to top sheet of cylinder press packing on color faking process employed in plant of McQuiddy Printing Co., Nashville, Tenn. The top overlay (cut from 0.020 enamel board) represents the blue sky area of the halftone shown in Fig. 1.

The middle mask with which the red impression was obtained of the building shown in the halftone in Fig. 1 was cut from a black impression of the halftone. Note the raised portions of the overlay which were printed in red ink—the buildings and the flower blooms.

At bottom is shown the mask from which the yellow impression was printed over part of the blue area to obtain green color for the grass and flower area.

When the blue mask was printed, the pressman also pasted the lower mask shown in this illustration (yellow) in register with the black impression of the halftone on the tympan or cylinder packing top sheet. The blue impression of the grass and flowers overprinted with the lower yellow mask provided green color for the grass and flowers. Thus the lower mask was used for two runs through the press.

Actually, the printing impression upon the sheet stock is done with these masks. The pressman removes equivalent thickness of the cardboard masks from the cylinder packing so that only the mask will furnish impression of the sheet upon the halftone cut. The press is washed up for each separate color run, but only the one halftone engraving is used with which to do the printing.

This is repeated for each of the colors to be used in the job. In every instance, all parts of the impression on the cardboard are cut away that are not desired to show color in the finished job, or in a color needed to complete another color.

When the mask-cutting work has been completed there will have been produced a separate mask for each of the colors to be used.

Color Printing Sequence

In producing color work by this process, the usual order of running colors as followed in process color work is reversed. Thus in this process black will be run first, with blue following, after which the red will be printed. Yellow will be the last color to be run, just the reverse of the usual yellow, red, blue and black order. The reason for this is to soften the details of the cut printed in black by having them overprinted with the color.

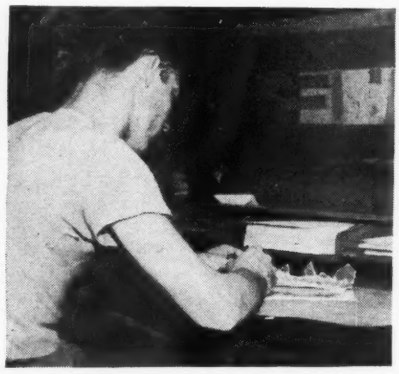
An impression of the cut or form is made on the top tympan sheet as is the usual custom and the sheet guides are adjusted. Enough padding is removed from behind the top tympan sheet to compensate for the extra thickness of the cardboard used to make the mask. No mask, of course, is used for the printing of the black.

Mounting the First Mask

After the black impression has been run, the pressman proceeds with the blue impression. Here is where the actual faking begins. There is already an impression of the halftone on the tympan paper. This forms a guide for pasting the blue mask on the tympan. Making certain that there is register between the mask already cut and the impression of the cut on the tympan, the blue mask is carefully pasted on the tympan.

If the Sheets Wrinkle

With the blue mask carefully pasted to the tympan and in register with the black impression previously printed on the tympan, the printing proceeds. The mask represents only that part of the cut that is wanted in blue, all other parts having been cut away. The cut-away portion of the mask is sufficiently low (0.020 in.) to prevent it printing so that only the part represented by the blue mask will print when blue is run. In some cases where there is a fairly large area in a cut that is not being printed at the time that some color is being run, the paper on which the printing is being done will tend to wrinkle a bit in that area with the result that a shadow of the color or a slight smudge may result. If this occurs, then remove sufficient of the blank area by cutting tympan and packing to make the area low enough so that the paper, even if it does wrinkle, will not touch the cut. While this may seem somewhat involved, in actual practice it is seldom that a shadow or a smudge will be produced in an area where no printing is wanted. When it does, this remedy will quickly eliminate the difficulty. When the tympan and packing must be cut away, it will be necessary to carefully paste down the mask all around the cut-away part as well as the tympan paper and packing to make certain that they are held down securely. No slip can be permitted in this process any more than in color process work.



Here one of the pressmen is making the letterpress overlay mask used in fake color printing method in plant of the McQuiddy Printing Co., Nashville, Tenn.

Changing Masks

After the blue is run, the mask is removed from the tympan but the tympan itself is not removed. The red mask is then pasted on the tympan paper, again taking care to see that the impression on the mask and the impression on the tympan are in register. And after the red run is off, the same is repeated for the yellow mask.

In making the masks it must be remembered that small objects such as an American flag would be difficult to cut in

(*Continued on Page 56*)

A Number of Delegates and Guests attending the Iowa Daily Newspaper Mechanical Conference—Seated left to right are Clarence Walkoe, Imperial Type Metal Co.; Charles A. Blanchard, Mergenthaler Linotype Co.; Joseph Stanard, Standard Linotype Service; Bud Pollock, George H. Morrill Co.; Walter W. Mezo, Duplex Printing Press Co.; William J. Prentice, Imperial Type Metal Co. Standing are Walter Sharp, Burlington (Ia.) *Hawk-Eye Gazette* Composing Room Foreman; Willis C. Hunter, Matrix Contrast Corp.; Harry Wilson, Mergenthaler Linotype Co.; Robert Robinson, Certified Dry Mat Corp.; C. E. Purkis, Imperial Type Metal Co.; Charles Adkins and William Rutenberg, J. M. Huber & Co.; Charles H. Brown, Duplex Printing Press Co.

Iowa Mechanical Conference

THE 20th annual convention of the Iowa Daily Newspaper Mechanical Conference and the Iowa Line-casting Machinists Association was held May 24, 25 and 26 in Burlington, Iowa. President Art Schmeichel, *Port City Press*, Muscatine, Ia., opened the meeting. He said that timidity should be thrown to the winds in the conference and all problems should be presented regardless of size so that they could be ironed out.

C. W. Moody, editor and publisher of Burlington (Ia.) *Hawkeye Gazette* welcomed the delegates to the conference.

After his response President Schmeichel introduced John P. Harris, publisher, Hutchison (Kan.) *News Herald*. Mr. Harris spoke about the obsolete equipment now in use and said it had produced a reactionary spirit on the part of workers and management to resist change and had held back an equipment revolution in the newspaper field.

Saturday night a reception was held in the Hotel Burlington ballroom for the delegates, their wives and guests.

Line-casting Clinic

Sunday morning M. F. Dingman of the Cedar Rapids *Gazette* presided at the Line-casting Machinists' meeting. The feature of the meeting was a question box.

In answer to a question as to why metal dust accumulated on the face and grooves of a mold, Walter Severin, Intertype Corp., Chicago, said it is due to improper lockup. He termed it a minor "squirt." He likened the lockup of a Linotype or Intertype to a series of Johannesen blocks—first, the lockup of the mouthpiece in relation to the back of the mold; second, the lockup of the front of the mold to the matrices in the line. He stated that as little as 0.002 in. variation between any point of the mold and the line of matrices at the time of lockup would be enough to cause this accumulation of metal dust. His suggestions were: Check the molds for squareness not only in themselves but also for squareness in relation to the vise jaws. Bert Stafford of the Wallace *Homestead* (Linotype machinist since 1898) showed a gauge he had made to test the squareness of the mold in relation to the vise jaws.

Another problem that was thoroughly discussed was the casting of a 36 pt. overhang on an 8 pt. slug, the trouble being a frosty face. It was suggested that this trouble probably never could be entirely whipped. The use of either a 10 pt. or 12 pt. slug would help but the concensus of opinion of those present seemed to favor casting the 36 pt. face on a 36 pt. slug and cutting in the 8 pt.

The headaches that come with the cutting and mortising of plastic plates also came up for discussion. Some used tin shears, while others used the guillotine. All were agreed that these plates could not be cut on a saw although some seemed to think they could be cut on a bandsaw with good results.

W. O. Wicklund of Federated Metals Co., discussed the use of higher tin content in metal. He said that more tin tended to give higher fluidity with a lower temperature. He stated that most plants are now using their high tin replacement metal in Ludlows and Elrods thus achieving a sharper, cleaner face.

This method also insures getting this dross replacement metal back into their supply. He stressed thorough cleansing and mixing of metals at the remelting stage, saying that a temperature of around 625 deg. seemed to be the most satisfactory heat. A variety of methods were given by the machinists present on how to clean the metal. Some used bone, others a potato and some preferred the cleaners offered by the metal companies. All were agreed, however, that metal should be kept clean and that all zinc and copper sawings should be watched closely so that they would not contaminate the metal.

The Line-casting Machinists Association elected B. J. DuSold, President. He is machinist of the Mason City *Globe-Gazette*. Others elected were Vice President M. F. Dingman, Cedar Rapids *Gazette*; and Secretary-Treasurer Leo Rosenberger, Clinton *Herald*. An executive committee named to assist the president consists of George Kriz, *Press-Citizen* Iowa City; P. W. Killiard, Muscatine *Journal*; and George Horecka, Oelwein *Register*.

Composing Room Clinic

The Composing Room session under the chairmanship of John Hardiman, composing room foreman Des Moines *Register* was held Sunday afternoon. Detailed charts of Linotype machines were shown to assist machinist-operators in composing rooms that do not have a full-time machinist.

There was considerable discussion as to advertising deadlines, reconstruction of ads, and charging for same, shortage of help and selecting and training of apprentices.

Most of the larger papers have 48-hr. deadlines on all advertising copy over 3 by 10. Others try to hold to 24 hr. deadlines while others, due to paper shortage, stop when they reach amount to be carried in number of pages to be

(*Continued on Page 52*)

ALBUMIN PLATE LIFE

IN answer to a question by a trade platemaker, Wm. J. Stevens, Secretary of the NAPL, who spoke before the Cleveland Craftsmen's Club in May, stated: "The printing life of an albumin plate should be from 75,000 to 100,000 impressions under the following conditions: Reasonably good paper must be used and a reasonably skilled pressman doing a normal day's work should do the printing. The human element enters largely into the matter."

Mr. Stevens also remarked: "Approximately 500,000 impressions can be obtained from a deep etch plate. After that, many good additional impressions can be obtained."

Color Printing by Letterpress

discussed by printing executive—Color correcting on film (indirect method), speaker says, is step in right direction

By JOHN DAVIS, Jr.*
*Production Manager, *National Geographic Magazine*, in plant of Judd & Detweiler, Washington, D. C. Abstract of address delivered before Fourth District Conference, International Craftsmen's Association, Washington, D. C., May 1947.

THE printer has progressed in adapting color to his printed pages. But his path of progress has been studded with problems. And those problems were solved and are still being solved with the help of the photographic industry, the engraver, the electrotyper, the ink plant, the paper mill, the press manufacturer, the roller manufacturer and so on down the line.

The color printer has printed four colors one at a time, two at a time and four at a time—1000, 2000, 3000, 5000, 10,000, 15,000 an hour. And still he progresses. Tremendous amounts of research in all the allied industries has been the answer to this steady growth and speed of reproducing quality color work. This progress of perfecting the use of and increasing the use of color in printing applies to all three major processes of printing, Letterpress, Offset and Gravure. In this discussion I shall refer solely to the Letterpress technique.

The old adage that "A chain is as strong as its weakest link", applies to the process of color printing with all the significance that it implies. The reproduction of a color scene will be rendered more nearly perfect if each operation leading to that reproduction is performed as accurately as possible.

Color film has constantly been improved by the manufacturers so that today accuracy in detail and rendition of color is much closer to the actual scene than ever before. The printer's best color reproduction will be made from a color film which is correctly exposed by the photographer, so let us begin at the beginning of the story.

The underexposed or dark picture will be dark in the printed reproduction, killing the normal bright color of the scene. The overexposed picture will have a washed-out effect in the final printed reproduction or a bleaching out of the true color regardless of what manipulation the engraver uses. He cannot reproduce something he has never correctly seen. And so it goes—each step should be perfected before the next step is attempted in the matter of quality printing.

We will assume that the engraver has a perfectly exposed full color transparency. The image is beautifully crisp and accurately colorful. Let us keep it so. When the engraver prepares his 4-color copper original plates, he has to capture the picture from the color film onto copper. His product, 4-color process halftones, have to go through many steps to accomplish that phenomena.

The engraver, in making his 4-color copper plates for so-called multi-color-wet printing has to keep in mind that his plates are merely the master plates from which many sets of nickel-face electrotypes will be made and that these electrotypes will have to print that same color image he has so carefully matched in his proofing *but* at a much greater speed of printing.

Experience has proved that color plates which have been matched to color transparencies by proofing on multi-color proofing presses are matched on the high-speed color presses much more closely than those which have been proofed on single-color proofing presses.

Today we receive proofs which have been printed in 11 sec. This on today's existent multi-color proofing presses. In the very near future we will have engraver's color proofs to match which will have been proofed in 2 sec. with but ⅔ sec. between each wet color. In our own plant this is coming much closer to actual press printing speed since we are printing approx. 1/5 sec. between each color. Naturally, this increase in the speed of proofing plates to be used in wet printing will enable the printer to reproduce the color pictures with more fidelity and with a greater approach to the original color picture.

The engraver is constantly striving to get correct color into his 4-color plates without distorting the copper plate itself. Certain plates can be made better by using the so-called indirect method of color correcting. This method, employing the step of color correcting the picture on film before actually putting the picture on metal, does require less tampering with the copper plate itself. I personally believe this to be a step in the right direction. Too much etching, lining out and burnishing does distort the copper plate and sometimes makes the electrotyper's job more difficult.

So much for the engravings. And now to the electrotypes which are *supposed* to be duplicates of the originals. Those of you who are familiar with the making of nickel-face electros know the many steps which are necessary to get a perfect electrotype—a perfect copy of the original. You know that the plate is molded under terrific pressure in a sheet of pure lead and that the mold is put into an acid bath wherein a shell is built into the mold. You know further that this shell is then stripped from the mold and backed up to printing height plus, with molten metal, is shaved, finished and shaved again. You know it is then curved to fit the cylinder of the printing press.

Stop and reflect. Doesn't it seem amazing that after this brutal treatment, we can get a press plate that prints like the original, that hugs the curved cylinder of the press with no high or low spots, with a perfect printing surface, 4-color nickel face electros that give perfect register? Doesn't it seem impossible? At least it is almost impossible to make electrotypes that are perfect.

But they have to be made near perfect, if we are not to lose sight of that ambition to print the color picture as the eye sees it, as the color camera caught it and as the engraver has endeavored to hold it. The electrotyper has made great strides in perfecting his product—his part of the endeavor to reproduce quality color reproductions. His equipment today enables him to get a better electrotype, a truer duplicate of the 4-color original halftone, with his precision molding presses, his careful control of baths, his precision finishing, shaving and curving equipment. These tools are aiding the electrotyper to accomplish his part of the over-all effort.

A word about plastic molds. The plastic mold, properly made, gives as good an electrotype as a lead mold. The process is still rather new, but has such great possibilities that many plates are being molded in this medium. I believe the plastic mold will prove to be superior by reason of its latitude. By this phrase I mean that the plastic can overcome some of the electrotyper's problems when he runs into an original plate which has some defects such as undercutting of certain areas. The lead mold made under terrific pressure will stick in the original plate whereas plastic requiring much less pressure will release more easily.

It is the electrotyper's endeavor to give the pressman a set of electrotypes that are perfect, that do not have to be corrected on press for electrotyping deficiencies. And he's doing a good job today. He'll do a better job tomorrow, because he is constantly improving his equipment and methods.

The printing press completes the picture, where with the aid of proper inks and proper paper, the pressman will reproduce a remarkable duplicate of the engraver's proof. And where that press-

man with proper supervision and constant attention to his equipment will continue to print many thousands of copies of that same color picture with careful color matching to the original copy.

There are many distinct differences between letterpress wet multi-color printing and process work printed either one color at a time or two colors at a time.

First, all four colors of ink are soaking wet and each color, yellow, red, blue and black, make their impressions on the same spot on the common impression cylinder in rapid succession whereas in 2-color printing, only two wet inks are printed each time and each color has its own separate impression cylinder.

Multi-color inks are formulated to lift each successive wet color from yellow to black. Each color plate is *underlayed* to make that plate print perfectly. In some plants today that step of makeready is taken care of by incorporating it into the plate itself. In other words, solids are made higher in the plate whereas highlights are made lower. This is reputed to reduce press makeready time and result in more productive running time.

The next step in makeready on multi-color presses is the makeready put on the impression cylinder itself. It is a composite spot sheet for all 4-color plates since they must all strike the impression or packing cylinder on the spot and requires careful spotting up and checking back.

Distinct advantages of the 4-color wet process are many. In sheet-fed work once through the press, all the colors are printed on one side so that total impressions are cut in half, compared to two-color process. Of course it requires long runs to spread the necessary longer makeready time and justify the use of the 4-color press.

In the case of web letterpress high grade commercial color printing involving even greater runs the sheet is printed on both sides once through the press and is folded into signatures on the same equipment through a continuous operation.

By printing all four colors complete in one operation, web or sheet-fed, the pressman can match his color to a much more perfect degree. He immediately sees the *final* color picture, (not just two of its colors), as soon as his press begins to run up color.

Because of this fact, he has it in his power to match his engraver's proof quickly and accurately and by reason of this constant color control can match the OK sheet closely throughout the entire run.

In addition to being a press which affords us the greatest possibility of correct color matching the multi-color sheet-fed press employs a system, which if properly supervised, will give the most accurate register of 4-color plates. A single set of grippers holds the sheet as it progresses through each color impression. Press register can be perfect if printing plates are made to register. And this register can be held throughout the entire press run.

And now we turn to ink and paper. Ink makers have made great strides in process color inks. They give the engraver and printer the best chance of capturing that natural color scene on paper through correct shades of yellow, red and blue to match true photographic color. And the ink man is always seeking to improve the color quality and finish of his inks.

With respect to paper mills, their laboratories are continuously improving paper manufacturing methods, in order to give the color printer a smoother sheet and a correct white sheet, which is receptive to process inks.

I wish to say that our industry has gone a long way in the last few years in perfecting color printing. I do not think it is going to stop there, however. We are going to give even better color rendition as time goes on because each of the allied industries will continue to give the public more accurately printed color reproductions and color pictures as the normal eye actually sees them.

Machinery and Equipment

Its availability in the Graphic Arts industries—Prewar base, reconversion, current and next year periods discussed — Results of survey among ten manufacturers furnishes base for conclusions

By GEORGE S. DIVELY*

**General Manager, Harris-Seybold Co. Paper presented at Lithographers' National Association convention, Saranac Inn, New York, June 1947.*

I UNDERSTAND that there exists a great deal of anxiety, considerable frustration, and perhaps some lack of understanding regarding the delivery of machinery and equipment to lithographers and printers. You who are our customers are entitled to know the facts regarding this post-war situation. My report will be from an industry viewpoint, although it is not an official industry report and deductions based on the composite industry data will necessarily be my own.

In assembling this data we contacted 10 of the largest manufacturers of machinery and equipment for lithographers and printers. Their shipments represent approximately 50 per cent of the total Graphic Arts machinery and equipment industry.

My discussion will be divided into four parts, namely:

I. What were the shipments during a pre-war normal period?

II. What were shipments during the 20-month reconversion period from V-J Day to April 1, 1947?

III. What are the shipments for the current quarter, April, May and June, 1947?

IV. What shipments are scheduled for the year ahead, starting July 1?

I—The Pre-War Base Period

Various government departments and other agencies usually consider the 4-year period 1936-39 inclusive the most representative pre-war period as a base or reckoning point in studying post-war production volume. During this period shipments of these 10 companies which supply you with machinery and equipment averaged 34,925,000 dollars annually.

Now before passing on to the first post-war phase, it is also important to have in mind a factual measure of how your suppliers of machinery and equipment made out financially in this four-year pre-war base period. I'll tell you. Based on such official SEC reports as are available, the industry's average net profit before taxes for this period was about 4.5% of sales. When you compare these results with SEC reports of other comparable companies in heavy industry, such as 20 typical machine tool and various metal working machinery companies which averaged 22% profit before taxes for this same period, or with 19 representative special industrial machinery companies which averaged 15%, there are several deductions that can be made. Either the price structure for Graphic Arts machinery was too low or perhaps management was otherwise at fault. At any rate, the result was that industry was short of working capital. This was reflected in several receiverships at various times. And, I think it can be said that

Plexi-glass Enclosure Cover—No safety glasses will be needed for stereotypers at the Minneapolis *Star* and *Tribune*. To eliminate the danger from flying metal, stereotype routing machines are being entirely enclosed. Here Benny Anderson, stereotyper, watches operations through the plexi-glass front.

adequate profit margins should, and probably would, result in more rapid technical progress which you undoubtedly desire.

> From a strictly selfish viewpoint on the part of lithographers and printers, and assuming good management on the part of machinery manufacturers, you will get the best equipment to produce your product at the lowest unit cost when the machinery and equipment manufacturers make enough money to attract outside capital when needed, to do much more technical development work in line with your specific requirements, and particularly to carry through the inevitable depression periods which are so devastating in the heavy equipment industries.

Let us now see what has been accomplished in the 20-month reconversion period since V-J Day, keeping in mind the 35 million dollar annual shipment volume for the pre-war base or normal period.

II—The Reconversion Period

It may not be too well known that, due to available skills and flexible machine tool setup for precision work of a complex nature, your machinery and equipment suppliers were one of the first industries to be almost wholly converted to heavy armament work. This industry is one of the very few in the United States that was practically blocked out from manufacturing its own peacetime products during a 3 to 4-year period. It is also one of the few industries that has a normal manufacturing cycle averaging around 6 to 9 months, which due to shortages of material and labor turmoil has been greatly lengthened during this reconversion period. In addition, there are few other industries that find it necessary to schedule from one to several dozen sizes and models of machines through their shops in relatively small lot quantities. Most of these machines have from 500 to 2500 different kinds of parts which must be manufactured in our own shops because they are not normal purchasable items. This means 2500 to 10,000 individual machining operations for the parts for each machine. And, all of these parts plus purchased items must be scheduled up to a year and more in advance to meet at a predetermined future time on the erection floor for assembling and erection into a completed machine.

The reasons, therefore, that it has taken 20 months for our industry to reach present production after V-J Day are: the necessity for about 95% reconversion from war products to peacetime products; multiplicity of sizes and machine models; unusually long manufacturing cycle; the great number of different parts that must be manufactured in our own shops; as well as the quite general but acute shortages of material and the overall problems regarding labor. In short, converting to war products in our industry was relatively simple as compared to reconverting back to civilian production.

Here are the shipment figures for the first post-war period. During the 20 months from V-J Day to April 1, 1947, these 10 companies shipped machinery and equipment totalling 84 million dollars, which was at an annual rate of 50 million dollars. This compares to the average annual basis of 35 million dollars in normal pre-war years. Of course, post-war prices were higher. What did this post-war 50 million dollars amount to in terms of actual equipment? After adjusting for price increases, the physical quantities shipped were on just about a pre-war normal basis for the first 20-month post-war period up to March 31st of this year. Although most of these shipments were made in the latter part of this period, nevertheless, for the whole 20-months and in spite of the lag in shipments in the early months after V-J Day, the annual rate of total shipments equalled those made in normal pre-war years.

This production was accomplished under terrific handicaps and expenses with risks far greater than those experienced in converting to war work. By way of illustration, let me give you a few of our own experiences, which you can assume are generally typical for the industry as a whole. Without firm orders, we committed our Company for well over a million dollars in materials prior to V-J Day, as one step in attempting to get a running start on civilian work; we spent another million dollars for new equipment and plant additions to increase output; we dropped a number of small and loss lines of products to make room for greater production of more important lines for our primary markets, we set up an overall program before V-J Day that has been directed towards securing and then maintaining a shipment volume in physical units of two and one-half times our pre-war normal; we started and have maintained a two-year manufacturing schedule as a planning means of providing effective coordination within our organization; we acquired additional permanent working capital to carry through this expanded program; we spent over $100,000 on duplicate patterns and used many expeditors in getting castings from 27 different foundries as compared to two in the pre-war period; and our defective materials and scrap has been around three to five times pre-war normal, and inspection costs have doubled those of pre-war, as the price of insisting on pre-war quality standards. Every one of these moves and many more are typical of those made or experienced by your suppliers of machinery and equipment during reconversion to peacetime products. They are aimed at satisfying your requirements as rapidly as possible, and for the purpose of developing a strong business that can continue to supply you with products of the most advanced design and highest quality.

During this reconversion period, I think it can be said that the industry operated on an overall net loss basis on its civilian business. Large losses were made in the early two-thirds of this first 20-month period after V-J Day with some start at profitable operations in the latter third.

Without this background on the reconversion status of our industry, the statement on losses might surprise you, particularly in view of the number of record breaking production and profit figures reported in the newspapers. I can assure you these much publicized figures apply chiefly to consumer type goods, where the manufacturing cycle is short, the reconversion if any is quite simple, or where production is based on continuous or line processes as compared to our job-shop type of operations. As examples, food products, textiles, beverages, steel, automobiles, radios, and retail stores fall in this category.

This is a general but realistic picture of the reconversion experience of our industry. It explains why we feel, despite our inability to supply all the equipment you want and need, that the machinery

manufacturers did an effective job during this period. Now, what about current operations?

III—Current Operations

Operations at present, for April, May and June of this year, present a much brighter picture as to availability of Graphic Arts machinery and equipment. In this present quarter, according to my survey, the 10 companies covered will ship products in the amount of 25 million dollars in round figures, which is at a rate of 100 million dollars per year. By eliminating price changes and converting again to a physical volume basis, this is at a rate of 167% of pre-war normal shipments. In other words, our industry is now shipping one and two-thirds times the amount of physical machinery and equipment that was shipped normally before the war.

At this point, we might look at the current situation on wages and purchased material prices as compared to the immediate pre-war period in January, 1941. The survey of the 10 companies shows that average wage rates are up 70% and further negotiations are currently in process. In general, productivity is probably down around 10 to 20%, due partly to new help. And, material prices are up around 60%. As to materials, it may be interesting to note that by far the largest single item used in the industry is cast iron on which the price is up 95%. During the past year, our company alone used between 10 and 11 million lbs. of gray iron castings.

For most of us, the overall labor content of our machinery and equipment is about 40% of the sales dollar and purchased materials another 30%. It follows that adequate income to provide for expanded technical development and sound operations must come out of increased volume above pre-war, greater productive efficiencies, and a price structure that is consistent with the 60 to 70% war induced inflation of a more or less basic nature.

At the present time, the high volume of production and shipments should be providing an overall profit for our industry. However, many problems remain with us. The current 15 cent wage increase trend will have a material effect on future costs. It is still necessary for us to return and scrap a good bit of purchased material because of poor quality. Our labor supply is fluctuating and inadequate particularly for the night shifts which are necessary for expanded production. The supply of cast iron is not yet sufficient. Delivery promises on some types and sizes of electric motors, chain and certain types of bearings continue to run from 9 to 15 months from the date of order. On the other hand, the accomplishments of the past 20 months are now of great help. Plant and equipment reconversion and expansion are largely behind us, some new designs are in production, quality has been generally maintained under most difficult circumstances, and production schedules are quite well coordinated. Our industry has now reached the point where you should be receiving fairly realistic delivery promises, barring new outside disturbing factors beyond our control. In short, according to this industry survey, machines are being shipped to you now, not tomorrow or next year, at a rate one and two-thirds times pre-war normal and with a quality standard equivalent to pre-war.

IV—Next Year

For next year, starting July 1, the survey indicates that about 110 million dollars in shipments will be made from the 10 companies surveyed. This is at a rate of nearly two times pre-war normal in physical volume. On this basis, you will be getting a lot of equipment from here on. In our own case, for example, we have scheduled for the year ahead two and a half times the number of power paper cutters that were shipped annually in the 4-year pre-war base period and three times the number of presses. We have enlarged both of our plants and transferred small press manufacturing to the Dayton plant. The enlarged Cleveland plant is now devoted almost entirely to the manufacture of larger presses. Incidentally, the lag in getting out more large presses as compared to the small sizes is attributable to the much greater manufacturing problems and not to any lack of maximum effort or concentration on the part of the manufacturers.

Parts and Special Machinery

Before closing and in behalf of the machinery manufacturers in particular, I would like to review a few secondary items by way of expressing our appreciation for your tolerance since V-J Day, and to ask you to bear with us just a little longer.

On service parts, we recognize your problems and are doing about all we can. Right after V-J Day every manufacturer was crowded by the bulge in demand for replacement service parts. We had in our company as high as 30 to 40% of our machine tool capacity on service parts in a desperate effort to meet the abnormal early post-war requirements. This situation is now much better but anything you can do to minimize service parts orders for old and obsolete machines will help us roll faster with more new machines, which we believe is better for your industry as a whole.

For special machinery and non-standard items of all kinds the situation is even worse. The cost under present conditions of making so-called "specials" is practically prohibitive from your viewpoint. The sacrifice in production capacity to make specials for a few people as compared to the much greater volume of standard units for the Graphic Arts industry as a whole would appear to be not sound or fair from an overall viewpoint under present conditions.

In view of our long and difficult reconversion, we ask for your fair consideration of our pricing problems, an understanding of our need for escalator clauses and credit programs, at least until we know how we are coming out of this complex period. With all the talk and forecasts of a recession in front of us, it takes considerable business fortitude and faith in one's industry to go before our boards and stockholders with a program involving at least twice the physical output and over three times the dollars in inventories on which commitments have to be made up to a year and sometimes more in advance. This we are doing with confidence, in view of the four years of lost production during the war period and the encouraging growth prospects for lithography. However, our customers will play the deciding role as to how we actually come through.

Conclusion

In conclusion, we believe the established machinery and equipment manufacturers have done a good job since V-J Day, in the face of reconversion problems that were far greater than converting to war work. Current production, not in post-war dollars, but in actual physical volume of machinery and equipment, is nearly 200% of pre-war normal. On a basis of projected schedules of the 10 companies surveyed, it is certainly evident that progress is being made in making up the production lost during the blocked-out war period. At the rate our industry is now going, there should be the machinery and equipment that you so badly need in your not too distant future. Free selling, a situation that will be better for all of us, should begin to appear in the small press and cutter fields before another six months is past. For larger units it will likely take quite a little longer.

Opens Los Angeles Branch

Monsen-Chicago, typographers, has announced the opening of a West Coast branch on August 1. Ray Lee has been appointed general manager of Monsen-Los Angeles. Lee has had many years experience in the advertising and publishing business in Chicago.

PAYS FOR IDEAS

Pressmen, reporters, paper handlers, salesmen—they're all digging up ideas at the Minneapolis *Star* and *Tribune*. A year-round suggestion program has been put into effects where ideas pay off according to their worth and the pay ceiling is unlimited.

Top winner in the first month was paper handler Elmer Nelson who pocketed $30 for an idea for remodeling a cement platform in the paper storage rooms to save newsprint rolls from injury.

The Linotype Assembler...

How to recognize mechanical troubles and what to do about them

By WM. J. BUTLER

I.

SO many different conditions affect the proper operation of the assembler that it is practically impossible to lay down a set of rules to cover its operation infallibly. However, there are certain settings and adjustments which we can bring about to provide a good running assembler. The condition of the keyboard, magazine escapement verges and verge springs, stationary front and guides, alignment of magazine with stationary front, assembler and assembler driving belt, spaceband box action and chute are some of the factors contributing to or detracting from the efficiency of the assembler. If keyboard cams need oiling or cleaning, or if keyboard cam rolls are glazed or hard, some matrices will respond more slowly than others.

No matter how much time and thought are spent on the assembler chute finger, stationary front guides and other assembler adjustments the results will not be satisfactory if the keyboard and its cams and rubber rolls or magazine escapement parts are out of condition. Be sure of the condition of these parts before spending too much time on the assembler.

An operator touches over 200 keys a minute. One or several cams that are a little slow to start, or that drag or slip in their contact with the rubber rolls will not deliver matrices at the chute spring and assembling elevator with the same timing the operator used in touching the keys. It can be seen that a slow traveling matrix can be overtaken by one that is delivered on time at the chute finger and star wheel or two matrices which have been lapped will not enter the assembler like a single matrix. They in turn may slow down enough in their passage under the assembler chute finger to interfere with following matrices.

The assembler chute finger is often blamed for being the cause of poor assembling. In such instances, it may be altered or adjusted in such manner that when other conditions are right the chute finger itself will cause trouble.

The assembler driving belt is tight enough if it drives the assembler when the star wheel is held stationary and the rest of the assembler is allowed to operate, provided the star wheel friction is strong enough to do its work.

The matrix delivery belt should be tight enough to carry the matrices satisfactorily to the assembler without slipping but not so tight as to cause unnecessary stretching. The matrix delivery belt support plate which reinforces the belt while carrying matrices, in time collects a coating of gummy substance. Inspect the plate and clean it if necessary. If the support plate is clean the matrix carrying belt can be much looser and still do a better job than a tight belt. Too tight a belt causes undue stretching and requires main drive and assembler drive belts to be tighter than necessary.

Spaceband Box Chute

The delivery of spacebands into the assembling elevator has an important bearing on assembling a line. At the extreme bottom end of the spaceband box chute plate (long) is an adjustable tongue made by two slots about ½ in. long on either side of it. This tongue should be bent just enough to the left so that the spacebands will strike the star wheel a trifle to the left of center. The lower end of the spaceband box short plate which forms the left side of the spaceband box chute should be bent to the right to close the opening in the chute to a point that will pass the particular thickness of spaceband being used with about 1/32 in. clearance.

Stationary Front

The stationary front guide holder can become sprung out of shape, particularly on multiple magazine machines, so that the matrices in leaving the magazine must climb up at some points and drop too low at others. The stationary front guide holder should be perfectly straight along that edge which aligns with the bottom of the magazine channels and a few thousandths of an inch below the channel bottoms.

The stationary front assembling guides should be checked at their tops for alignment with the magazine channels and especially at the lower ends where they guide the matrices to the assembler belt. If necessary, bend their bottom ends with a gentle left flowing curve to cause

PERSONAL CONFUSION ELIMINATED AMONG OPERATORS WHEN NEW MATRICES AND MEASURE ARE INTRODUCED

IT IS a well known fact that newspaper operators "get into the groove" with respect to slug measure and type style. But when the column width measure and the matrix font are changed some confusion among the operators arises unless specific instructions are issued to them. With its Thursday morning issue on March 27, the Cleveland *Plain Dealer* commenced setting its classified pages in a new type face with new style and a new column measure (10½ picas). Composing Room Superintendent Deo A. Padgett formulated a memorandum containing instructions together with information necessary to the change. The changeover to the new style and measure was accomplished with minimum confusion. The memo issued to the operators and proofreaders is as follows:

All Classified Ads will be set 10½ picas starting with issue of Thursday morning, March 27, 1947.

All body type will be set flush (no hanging indent). Follow latest style on liners—first word only in caps.

Set Ejector Blade on your machine to 10½ picas for both 5 pt. molds. (You will use the 10½-pica ejector for 10½ picas as well as the 12-pica slug). Do not use the 12-pica blade.

Your 5 pt. keyboard is the same as in the past with two exceptions—the exclamation point (!) runs pi, and the minus (—) sign for the markets runs in that channel. The down (|) rule has a space that is equal to all reference marks. After finishing with markets you can run out the minus (—) signs and run in five exclamation points that have been provided for the regular channel.

Fractions are same width as molly quad.

Minus and plus signs are same width as nut space.

The following characters run in the pi chute:

Two each of 1/5 and 2/5.

One each of 1/6, 2/6, 3/6 and 5/6.

Three down (|) rules.

Two English pound (£) signs.

Three each of all reference (†) (‡) (¶) (§) (‖) marks.

Two diagonal (/) marks.

Two (AP) logotypes.

Three each foot (′) and inch (″) marks.

Three each of all sixteenths.

Three exclamation (!) points pi; five to run in keyboard.

Three number (#) marks.

Three cap X and Z.

Two per cent (%) marks.

If it is necessary to borrow reference marks (or any other matrices) from another machine, operators are requested to return same when through using them.

Logotypes for the months of the year and all thirty-seconds are at the news copy desk.

You will find the figures are special width. The nut space is the same width as the figures. For two figures use two nut spaces or a molly quad and a thin space.

The thin space is 2 pts. in width.

The space in the down rule (mentioned above) is one-half the width of the molly quad—or two of these spaces equal one molly quad.

A THOUGHT IN EACH REMARK

(Summary of remarks made by W. J. Stevens before the Cleveland Craftsmen's Club, May 1947. Mr. Stevens is Secretary of the National Association of Photo-Lithographers)

WHAT the printing industry needs is a "shot in the arm." The Graphic Arts Industry must create its own market by initiating, planning, designing and promoting new ways to use printing. Printing executives are prone to sit on their fannies until the next job comes along. For instance, an advertising agency might create the idea of using a wrapper for towels. The agency has the printer do the job. After the job is finished the printer may sit down in his desk chair expecting that advertising agency to send over another job of some kind . . . You must put something into the Graphic Arts if you expect to get anything out of it . . . The letterpress industry should carry on more educational activities . . . It (the letterpress industry) should train men with the idea in mind that it is making *better* competitors for the future.

the matrices falling beside them to change their course from perpendicular to the slant of the matrix belt as smoothly as possible. Endeavor to maintain space enough between the guides at the bottom. If there is too much bend at the lower end of the guides the matrices may be retarded owing to the amount of space they need to make the turn to the angle of the matrix belt. The result of the guides being too straight at the bottom or too little curved would be that the matrix would strike the belt at too sharp an angle causing the matrix to rebound slightly. This retards their smooth travel to the assembler, and also causes undue wear of the assembler belt.

A great deal of good judgment is necessary when flexing the matrix guides. It would be a good idea to look at a new machine or one that is working perfectly before bending them. Especial notice should be given to the matrix guide that delivers the matrices to the upper end of the assembler chute rails at the point where the matrix belt passes under the chute rail springs. This guide often allows a thin matrix to slide under one of the chute rail springs, or a thicker matrix to strike the springs. When the belt wears and more space appears between belt and rails, the curve of the matrix guide may have to be changed either to throw the matrices past the danger point or it may have to be straightened so matrices will strike the belt ahead of this point.

The Chute Finger

As to the assembler itself with its chute finger, assembler slide and brake and brake release, we will consider the skeleton type chute finger which is not adjustable. The position, tension and general functioning of other types is similar. This is the type of chute spring that bears only on that part of the matrix ears which are cut to fit the channels of the magazine, and it can be used successfully on all sizes of matrices.

When this type chute finger is installed outside the factory to replace one of the solid type chute fingers, it is very helpful and almost necessary to install also the assembler entrance plate guide that has two thin extensions at its lower end. The extensions on this plate guide are narrow enough to pass between the rails of the chute finger and extend downward between the chute finger and assembler chute rails to within about ½ in. of the end of the chute finger rails. This plate guide replaces the one equipped with the single wide extension which is used with the solid type chute finger. The narrow double extension type plate guide is especially useful when assembling thin matrices as it does most of the work of guiding them to the assembler. It also serves as a guide for thick matrices but is not stiff enough to interfere with their travel and is pushed up between the rails of the chute finger while the chute finger then takes over.

By removing the chute finger from the machine and using a thick matrix as a gauge, the chute finger can be adjusted to fit the matrix. The extreme width of the matrix is 0.750 in. (¾ in.) and that should be the width of the chute finger from outside to outside of the rails. Then the chute finger rails must be at right angles to its screw so that when it is mounted it will not rub or bind either front or back. Bend the tongue on the chute finger so that when the tongue is in contact with the chute finger stud the chute finger rails at the lowest point of curved under-edge are about 4 points from the assembler chute rail and from 1⅜ in. to 1½ in. from the center of the assembler star. When assembling the chute finger, its spring and screw, make sure the coil spring does not bind in any way but transfers its pressure from stud to chute finger without any added braking or binding effect on the chute finger.

The tension of the spring on the chute finger should be light enough so that when assembling matrices the chute finger will show decided vibration or movement on its stud, but not so light that heavy matrices will not be deflected toward the center of the star wheel.

If the chute finger was applied without benefit of a template check its position to see that it deflects the matrices towards the center of the star wheel.

Follow an imaginary curved line starting at the under edges of the chute finger down to the star wheel. If this imaginary curved line passes through the center or a trifle left of center of the star wheel, the chute finger is in about the correct position provided the lowest point of the chute finger curved under edge is about 4 points from the assembler chute rails and from 1⅜ in. to 1½ in. from center of assembler star and the upper end of the curved under edge is about ⅜ in. from the assembler rails.

When all sizes of matrices are to be assembled this probably is the best all-round position for the chute finger. The angle of the chute finger will be a little closer to the angle of the matrix belt than the perpendicular. Any slight change from this position nearer to the angle of the matrix delivery belt will favor assembling the light matrices and slight change to the perpendicular will favor the heavier sizes.

The 4 pt. space between the lowest point of the chute finger and assembler rails is to be considered constant for all sizes of matrices. Any change in the angle of the chute finger must be accomplished by moving the chute finger screw and chute finger stud. Extra threaded holes are provided by the manufacturer except when the chute finger has been applied outside the factory and any change must be accomplished by drilling and threading new holes, which require a 6-48 tap and proper size drill.

Be sure the chute finger does not bind either front or back and there is space with clearance for the body of large matrices between the chute finger rails.

(*To be continued*)

PRINTING PERCENTAGES BY OFFSET PROCESS

(Abstracted from address by W. J. Stevens, Secretary, National Association of Photo-Lithographers, before Cleveland Craftsman's Club, May 1947)

The offset process is utilized in many different types of label and other printing.

Over 70 per cent of the cigarette labels are produced by offset.

Over 94 per cent of the can labels are produced by offset.

Mr. Stevens explained, however, that he expected this percentage to drop by 10 per cent this year. During the war the can industry could not obtain metallic materials. With greater availability, of these materials, other processes will again be utilized.

Approximately 97 per cent of all decalcomanias are done by offset.

During the war, some decals were produced by silk screen and letterpress. One decal to be applied to refrigerators was produced by the silk screen method. A very heavy design coating in not-too-big quantities was demanded. It is likely, however, that since production is extremely slow by the silk screen method, a greater amount of decals will be produced by offset in the future.

Approximately 87 per cent of the candy can labels are produced by offset.

Coffee can labels (almost 100 per cent) are produced by offset.

Maps—98 per cent of them are produced by offset.

The speaker explained that in producing city maps, utilization of the offset process is the easiest way out. One of the predominant reasons is that offset printers have done a good selling job. The process itself is flexible for map production.

Construction is under way for the book printing and binding plant of Doubleday and Co., Inc., at Hanover, Pa. The building, 340 by 440 ft., will be faced with hand-cut native stone, glass brick and aluminum sheathing.

Delivery of equipment is expected within the next few months, and will include rotary presses and bindery equipment suitable for production of Doubleday's book clubs.

With the exception of key technical personnel, employees will be selected from the local area and trained for their jobs.

Opens Branch

J. Thomas McHugh Co., distributors of printers supplies, have opened a branch office in Chicago at 205 W. Wacker Dr. It was announced by J. Thomas McHugh recently.

Awarded Scholarship

Ralph E. Painter of Philadelphia, a January graduate of the Murrell-Dobbins Vocational School, received a four years scholarship award from Printing Industries of Philadelphia, Inc., to the Carnegie Institute of Technology, Department of Printing.

Ralph, 19 years of age received this scholarship, which has a value of $2000 as a reward for exceptional performance and ability in Graphic Arts training at the Murrell-Dobbins School. He was number one in a class of 129 students.

Equipment Installations

An E. B. Co. Willard Offset Press has been installed for Herman Tugender at the Woodrow Offset Corp., 227 E. 45th St., New York, N. Y., it has been announced by Stuart E. Arnett, Sales Manager of Printing Machinery Div. of Electric Boat Co.

A display room in functional design, for printing and binding machinery was opened recently by Western Newspaper Union in Oklahoma City. In addition to the general lighting, concentrated display lighting for individual equipment is provided by floods and directional spot lights mounted overhead.

The display room is 48½ ft. by 38½ ft. Adjoining the display room is a customers' conference room to accommodate small group meetings of printers and publishers and is decorated to harmonize with the display room. It also provides facilities for display of printed specimens.

Equipment from many manufacturers was featured at the opening including Miehle, Hamilton, Hammond, Rouse, Rosback, Challenge, Chandler & Price, Nygren-Dahly, Olson and Doyle.

Extra Guide Helps Envelope Feeding

By Harold Melville Peer

IN feeding envelopes on the press, too often the flap tends to raise the envelope which results in a smeary job. And it is often difficult to feed with any speed because of inability of feeding them in straight. A little idea worked out by Frank B. Robinson, with the Bellanger Printing Co., Florence, Ala., consists of an extra guide pin on the press tympan. Mr. Robinson can run off a box of 500 envelopes in 15 to 20 min. with no misses.

The idea starts with the lock-up. Instead of locking up the envelope card in the usual way so that the envelopes will be fed with the flap edge away from the feeder, Mr. Robinson locks up the type form so that the envelope must be fed with the flap edge toward the feeder.

After locking up the form the make-ready is a bit different, too. Instead of using a single sheet of tympan paper, two sheets are used. He begins, with one sheet, however, fastening it in the usual way. Then an impression of the envelope card is made on the tympan paper. A piece of the flap from one of the envelopes is pasted on this tympan paper so as to even up the extra thickness caused by the envelope flap.

The bottom of the tympan paper is then loosened and a second sheet is inserted. This is tightened and the top of the first sheet of tympan paper is loosened and the top edge of the second sheet of tympan paper pressed into place and the tympan paper tightened. By putting on the second sheet of tympan paper part at a time, the first sheet is not entirely loosened and thus remains in its original position.

The type form is now impressed on the second sheet of tympan paper. The side and bottom of the envelope are then marked on this second sheet of tympan paper so that guide pins may be inserted in their proper place. As is usually done, one guide pin is inserted along the left-hand side guide line that has been marked on the tympan paper. This pin is put in so as to come about in the center of the left end of the envelope. Two other guide pins are inserted along the bottom guide line that has been marked on the tympan paper in the same manner usually done. These pins are put in so that each comes about 1 in. from the side or corner of the envelope. Up to this point the insertion of the guide pins is according to the usual procedure. Mr. Thompson's kink now enters into the picture.

He next takes another guide pin and inserts in it one of the long tongues that come with guide pins. This tongue has been previously pulled out as far as possible and bent to form a V-shaped spring with the apex of the V pointing downward when the pin is in place on the tympan paper. The extra guide pin with the V-shaped tongue acting as a spring is inserted along the bottom line that was drawn on the tympan paper and

midway between the two other guide pins.

The V-shaped spring tongue holds the envelope in position so that the envelope fed to the two bottom pins and to the side pin cannot slip. The tongue spring also holds the envelope close to the tympan paper to avoid smudge in printing.

Buys Lindbladh

After 33 years, Robert T. Duffy, president and treasurer, and William Cloutier, vice president and chief engineer of the Lindbladh Corp., Boston, have sold control of the Lindbladh Co. to Miami Industries, Inc., 201 Morris St., Toledo, O. When announcing the transaction, John Goerlich, president of the Toledo concern stated Mr. Duffy would continue with the new setup as president in charge of the Boston office at 40 Court St. Mr. Cloutier has joined the Miami Industries staff in Toledo.

ITCA Convention

The International Trade Composition Association will hold its annual convention in Detroit at the Book-Cadillac Hotel on August 28, 29 and 30. The 70 percent increase in membership this past year forecasts the largest attendance in its history. Frank M. Sherman, executive director, reports there are 310 active, 29 associate, 2 honorary life memberships, making a total of 341 member plants.

Convention sessions are scheduled for the mornings and entertainment is planned for the afternoons and evenings of the three day period.

Timken Opens Branch Plant

A branch plant of the Timken Roller Bearing Co., Canton, O., was opened recently in St. Thomas, Ontario, Can. The plant has a roster of 225 employees, 30 of whom are supervisory personnel. The plant is located on an industrial building site of 70 acres purchased from the City of St. Thomas.

Furnace Improved

A DEFLECTOR has been added to the bottom outlet soft metal melting furnaces manufactured by the Surface Combustion Corp. The deflector was developed to permit small metal slugs to be shoveled into the furnace, without danger of falling through the raised flue openings of furnaces with bottom outlet. This, it is claimed, permits easier charging.

Pioneer Saw Trimmer

A SAW trimmer, the Model D, is being produced by the Pioneer-Toledo Corp. It is designed for the one-saw shop. The saw will handle strip material or slugs, and can be used to undercut electros, shell or solid casts to any size.

Manufacturer claims the table, frame and arbor are heavy enough for the stereo room and the gauge equipment meets the precision requirements of the composing room. The height of the saw blade is adjusted by raising and lowering the arbor, which can be set and locked with one hand.

Gauge runs on a track at left of table. Pica gauge has thumb control and can be removed without tools.

Table is 18 in. by 22 in.; 6 in. swage tooth blade; 80 pica capacity gauge; clamp, 5 in. capacity; weight, 150 lbs. Further information may be secured upon request to *Printing Equipment Engineer*.

Miscellaneous Problems

Abstract from address delivered by G. L. Erikson, Executive Vice President, Braden-Sutphin Ink Co., Cleveland, before convention of the International Association of Printing House Craftsmen, Montreal, Canada, September 1946.

UNDER this heading should be listed various types of problems such as *Printing on laminated papers* or *overprinting large areas of metallic inks*, when the overprinting ink may dry perfectly in three to four hours, but will be wet after twenty-four hours or after several days.

This unusual phenomenon is explained quite easily when it is remembered that the solvents and plasticizers used in laminating and the oils used in metallic inks are slightly volatile and are excellent ink solvents.

After the overprinting inks have dried, normally, these solvents and oils are gradually released in the pile and eventually soften the dried ink, so that it is actually wet again.

The only satisfactory cure for this trouble is to air the stock well, or preferably bake it, so that all of these volatile oils and solvents are driven off.

Printing on pyroxylin surfaces often causes some peculiar problems. I have seen a pyroxylin book cover stock which was a sort of rough linen finish but not too difficult to print, and the printer in his enthusiasm to do a very nice job, had the printing areas smoothed out by hot stamping, and this operation brought so much oil and plasticizer to the surface that it was almost impossible to print, and the inks really never dried hard.

Metallic Ink is back on the market, and the general rules for handling this product are still the same as always; use good live rollers, set very lightly to the form and to the vibrators, use as few rollers as possible to get good coverage, use a light printing impression, carry a full color of ink and keep the humidity as high as possible.

Blocking out a previous printing is a favorite pastime these days with rapidly changing prices, etc., and this is often very difficult to accomplish perfectly. The use of metallic ink, or of heavy films of dull or semi-dull opaque gray inks will usually give satisfactory results.

Printing on heavily waxed paper cannot be done with any degree of satisfaction. The inks may be made to "take" and dry fairly well but they will always rub or scratch off with any pressure or rubbing which would mar the soft wax surface.

Imprinting over varnished surfaces has been more difficult recently because of necessary changes in the varnishes which are usually formulated with some of those "floating" waxes or greases to prevent sticking of the varnish itself. Your ink maker can usually furnish special inks which are satisfactory for most of these surfaces.

Another type of problem is often caused by "dopes" in inks, particularly these "floating dopes" and I call these, "*backing up problems.*"

When backing up very solid prints, especially metallic prints, or when using very thin papers, the print on the backup is likely to have different characteristics where it directly backs up another print, than it has where the paper on the back is unprinted. The trouble may not show up until the second color is printed on the backup.

Grease or wax in the first color on the backup, may penetrate the stock where the reverse side is blank, but where printing appears on the first side, the thin paper has been effectively sealed against penetration, and the wax or grease will float in those areas on the backup. This may cause a second color to "take" differently over the first color, on these different surfaces.

Action of ink on rollers is a problem which should have a great deal more study. There is plenty of evidence that certain inks will crack or harden the surface of some types of rollers, whereas other inks have no such affect on these same rollers.

This is a seasonal problem which disappears about as rapidly as it comes, and the reasons are not fully understood. There is some indication that aged rollers, as well as aged inks will help in this problem, as will some formulation changes in the inks.

Action of Age on Inks. I have been asked many times about the action of age on inks. There is no general rule unless it should be that ageing improves all inks. However, there are some exceptions, which are those few cases where hardening or livering, or loss of drying occurs on ageing.

You have no doubt used inks which printed perfectly after 10 years or more of ageing and were probably much better than the fresh inks. In general, it would seem that a few weeks or months of ageing would improve all inks and in the case of offset inks, a certain amount of ageing is considered definitely necessary before the inks are ready for use.

In general, it is advisable to store inks away from extreme heat to help prevent livering and hardening.

The practice of using water in a can of ink to prevent skinning is not to be recommended as this generally causes livering and loss of drying. The addition of dryers to inks will also tend to hasten livering in some cases.

EXECUTIVE ¶s

Andrew J. George has opened a laboratory at 975 Folsom St., San Francisco, Calif. Mr. George was formerly chief

Andrew J. George opens his own business in San Francisco.

chemist for the Schmidt Lithograph Co., having been associated with that company for 25 years. He will act as consultant to lithographers and manufacture platemaking materials. He is President of the Pacific Society of Printing House Craftsmen, a member of the research committee of the Lithographic Technical Foundation and a member of the American Chemical Society.

J. D. Wright, manager of the Industrial Engineering Div. of General Electric's Apparatus Department, announced recent assignment changes in that department. H. W. Rogers, former engineer of the Paper and Textile Div. has become engineering consultant with special assigned duties. G. W. Knapp, former engineer, Rubber and Printing Div., was appointed to the position formerly occupied by Mr. Rogers. C. E. Miller, engineer was appointed to succeed Mr. Knapp.

Alfred B. Rode, jr., has been elected president of Rode and Brand, Inc., in New York, it was announced recently by

President of Rode and Brand, Inc., Alfred B. Rode.

A. B. Rode, chairman of the board. The lithographic company was founded in 1877 by Edward F. Rode, grandfather of the new president. Mr. Rode is a past president of the Young Lithographers Club.

Fred A. Hacker has been appointed vice president in charge of sales research of American Type Founders, Inc., it was announced recently by Edward G. Wil-

Fred A. Hacker, appointed vice president of sales research for ATF.

liams, president. Mr. Hacker will be responsible for the investigation and acquisition of new products for ATF's Graphic Arts Division. He is a member of the Club of Printing House Craftsmen of New York, the New York Litho Club, and the Young Lithographer's Association.

It was announced recently by Herbert Kaufman, advertising and public relations consultant, the removal of his office to 103 Park Ave., New York 17, N. Y. Mr. Kaufman has been retained as consultant by the Milton Paper Co., New York.

Doubleday and Co. announced the naming of Louis B. Kirkland as Director of Public Relations of its new book print-

Louis B. Kirkland, Director of Public Relations for Doubleday and Co. at Hanover, Pa.

ing and binding plant now under construction in Hanover, Pa. Mr. Kirkland was formerly on the faculty of Pennsylvania State College.

Members of the New London (Conn.) *Day's* staff inaugurated a 25-year service club. A dinner meeting was held at the Mohican hotel on June 14, by the Day Publishing Co. for those employees having 25 to 45 years of service. After brief talks by the directors, framed service certificates and gold service buttons were distributed to George H. Grout, director, 45 years; Col. Alfred Ligourie, city editor, 36 years; Francis H. Ham, typesetter, 35 years; James S. Flanagan, typesetter, 34 years; Orvin G. Andrews, secretary, director and general manager, 33 years; George W. Kent, pressroom foreman, 33 years; Walter C. Crighton, composing room foreman, 32 years; Michael V. Ryan, head stereotyper, 30 years; John P. Connell, assistant foreman of composing room, 30 years; Leon N. Colby, typesetter, 28 years; Mrs. Eleanor S. Leather national advertising clerk, 28 years; Earle E. Murphy, composing room mark-up man, 26 years and Charles J. O'Connor, advertising manager, 25 years.

R. J. Niederhauser, advertising manager of Harris-Seybold Co. for the past two years, has been promoted to sales

Harris - Seybold Co.'s sales promotion manager, R. J. Niederhauser.

promotion manager in charge of market study and advertising, it was announced by H. A. Porter, vice president in charge of sales. J. A. Petrequin, a member of the sales department for the past year, has been added to the sales promotion staff.

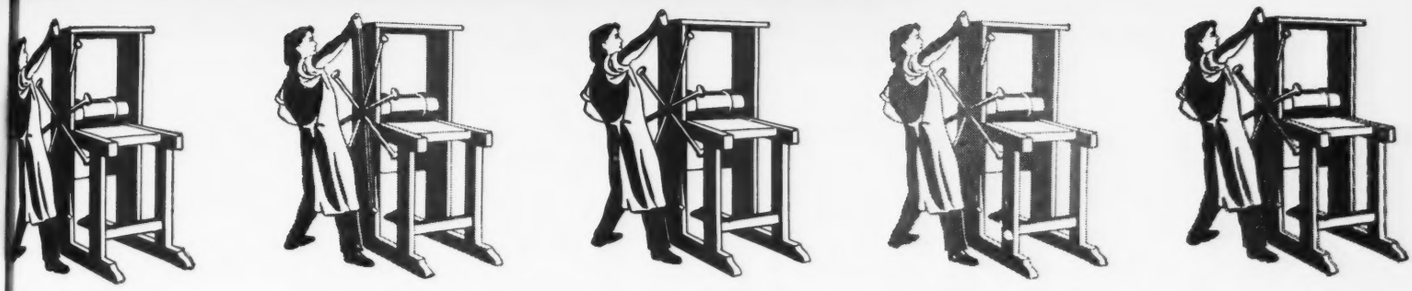
Ralph H. Nolan, executive president of Nolan Corp., announces the appointment of Robert D. Berry as advertising

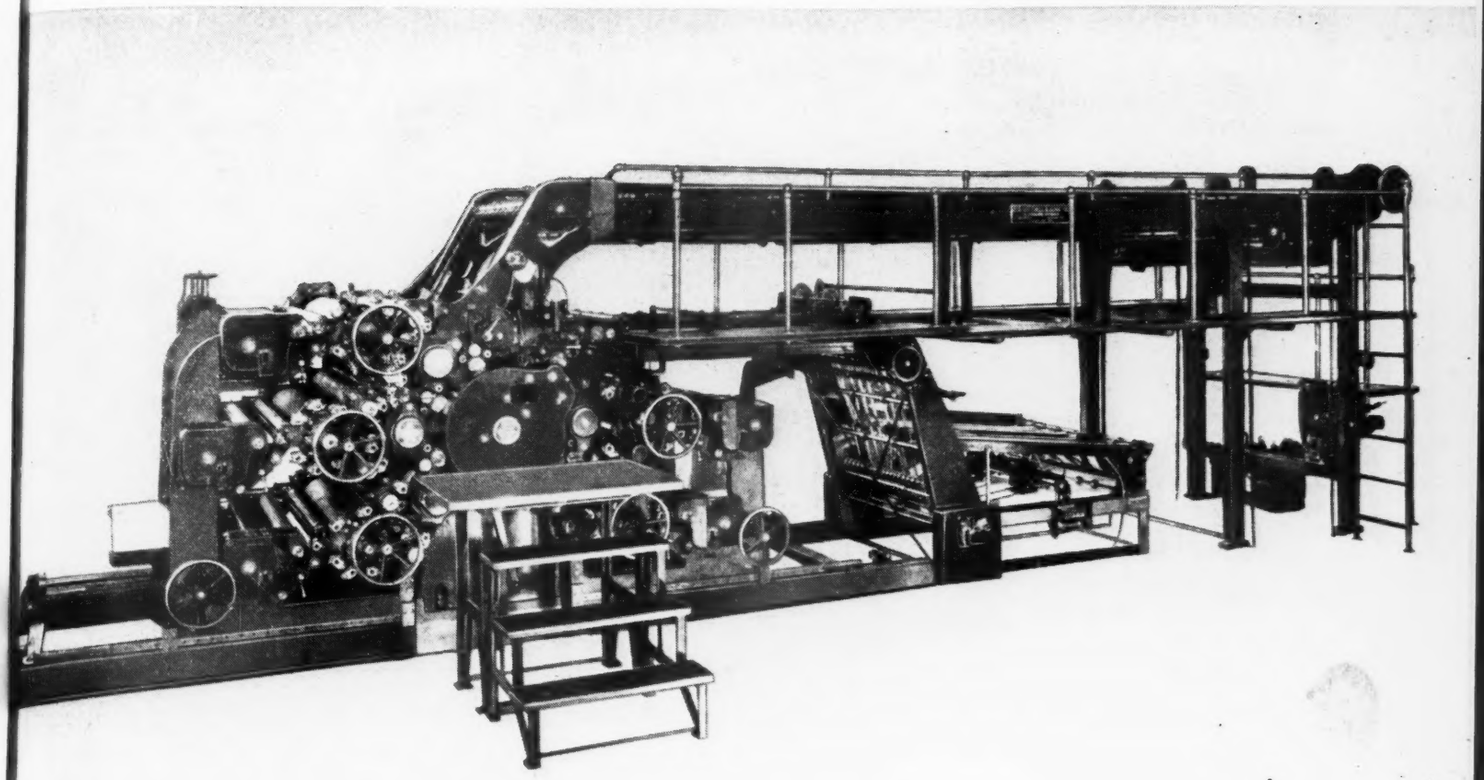
Robert D. Berry, recently appointed advertising manager of the Nolan Corp.

manager. Mr. Berry has devoted his business career to machinery sales promotion. His appointment is the result of a policy to handle all advertising direct from the main office at Rome, N. Y. An additional plant goes into operation this month at Prospect, N. Y.

According to W. W. Brown, Executive Vice President of Western Newspaper Union, Frank A. Freeman has been named manager of Chicago office of Western Newspaper Union. Previously, he had been assistant manager and

r today's Artistic Color Printing





The Cottrell 5-color sheet-fed rotary press

Printing, rich in color beauty rolls off this Cottrell press in mass production quantities with individual perfection in register and ink distribution along with lower operating costs. The Cottrell five-color rotary press operates at speeds of up to 6000 sheets per hour and is ideal for broadsides, booklets and publication printing . . . a press for the kind of quality and quantity production you like to achieve.

C. B. COTTRELL & SONS CO.

Westerly, Rhode Island

New York: 25 E. 26th St. • Chicago: Daily News Bldg., 400 W. Madison St. • Claybourn Division: 3713 N. Humboldt Ave., Milwaukee, Wis. • Smyth-Horne, Ltd., 13 Bedford Row, London W.C. 1, England

ER 93 YEARS OF GROWING WITH THE PRINTING INDUSTR

Cottrell

assistant sales manager of the Chicago office. He succeeds the late Charles A. Parsons who held that position. Mr. Freeman at various times has been associated with 15 press associations. He has been manager of the Kansas City and Dallas branches of WNU.

At left is Axel Schmidt, jr., of Oslo, Norway; at right is Al P. Oberg, Composing Room Supt., Flint (Mich.) *Journal*.

Two worthy representatives of the Graphic Arts Industries paid a visit to the offices of *Printing Equipment Engineer* recently. At left is Axel Schmidt, jr., Mechanical Superintendent of A. S. National Trykkeriet & Forlagsbokbinderiet of Oslo, Norway. Mr. Schmidt has been in the United States several months studying American production methods and equipment. His firm is a publisher principally of hard-bound books. Standing at the right is Al. P. Oberg, Composing Room Superintendent of the Flint (Mich.) *Journal*. Mr. Oberg is also Secretary of the Great Lakes Mechanical Conference.

Tingue, Brown & Co., manufacturers of printing press blankets and drawsheets has announced the appointment of John W. Foster, jr., as their New England representative. His territory is New England with the exception of Connecticut. Since his release from the army he has been employed by Tingue, Brown in New York.

Theodore T. Toole, president of Sleight Metallic Ink Company of Pa., Inc., has announced the appointment of

Murray A. Beckford has been appointed Assistant to the President of the Sleight Metallic Ink Co. of Pa.

Murray A. Beckford, as assistant to the president. Mr. Beckford was formerly sales and advertising manager of the Frederick H. Levey Co.

In line with its policy of promoting capable men from within its plant to managerial positions, the Reynolds & Reynolds Co., printers and lithographers of Dayton, O., has announced the appointment of Gordon R. Rohde as general plant superintendent. Rohde was formerly a division superintendent. William Stittgen was moved up from foreman of the offset lith pressroom to assistant plant superintendent and Russell Cromes, night foreman of the offset-lith pressroom, was made assistant superintendent at night. Michael Duplinski, a former president of the Dayton Local Amalgamated Lithographers of America, was named to follow Stittgen as foreman of the offset-lith pressroom. The appointment of Harry Brelsford as production manager was also announced. Mr. Brelsford has been with the Reynolds & Reynolds Co. for 45 years.

Arthur Dressel has been elected senior vice president of R. Hoe & Co., Inc., it was announced recently by Joseph L.

Arthur Dressel, recently elected senior vice president of R. Hoe & Co., Inc.

Auer, president. Mr. Dressel will retain his duties as general sales manager. He started with Hoe in 1925. He is an executive member of the National Federation of Sales Executives.

The Miehle Printing Press & Mfg. Co. has announced that William H. Hammett, jr., is sales representative for the company in its Cincinnati territory, which covers southern Ohio, southern Indiana, the western part of West Virginia, and Kentucky. Since his release from the Navy in January 1946, Mr. Hammett has been connected with the Miehle Company in Chicago.

The appointment of new representatives for its Michigan and Missouri-Kansas territories has been announced by the Kohl & Madden Printing Ink Co. Vic Paul has taken over the Michigan territory. His headquarters are at 1035 First St., Detroit. Albert Renda, 1035 W. Broadway. St. Louis, represents Kohl & Madden in Missouri, Topeka and Wichita, Kan.

The appointment of Peter Rice as service manager of the Printing Machinery Div. of Electric Boat Co., was an-

Peter Rice, service manager for the Printing Machinery Div. of E-B Co.

nounced recently by Stuart E. Arnett. Mr. Rice was a former instructor in the New York Trade School under the sponsorship of the Lithographic Technical Foundation. He is a member of the New York Litho Club.

Visitor from Australia

James Cook, governing director of Seligson & Clare, Ltd., Melbourne, Australia, is visiting the United States in July. This is his first trip to America since 1935. He will be glad to have manufacturers interested in exporting printing and paper, converting machinery, and all equipment and supplies for the Graphic Arts contact him c/o World Development Corp., 487 Park Ave., New York, N. Y.

BOOKS

RECEIVED

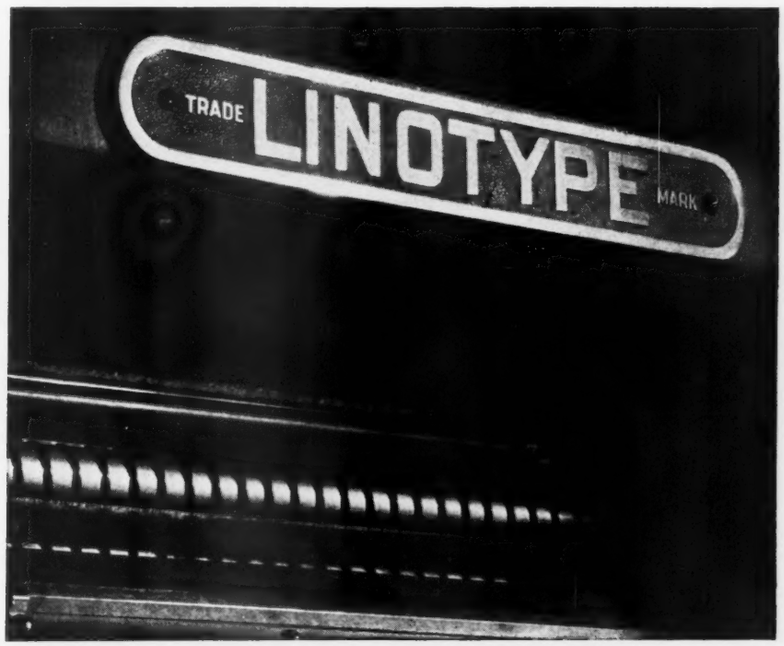
Intertype-Linotype

Posture and Operation

A 12-PAGE booklet entitled *Intertype-Linotype, Posture and Operation*, by Joseph F. Sorace, has been published by the Rochester Institute of Technology. In the booklet are seven exercise lessons designed to aid the beginner. It is based on the principle as outlined in the introduction, as follows: "Research operation of an Intertype-Linotype machine has revealed that it is advisable to develop a 'reserve' fingering system animated by eye-alertness and impulse, rather than by a definite finger placement, operating specific keys."

Size, 8½ in. by 5¼ in.; price, 10c. Available from the Rochester Institute of Technology, Rochester, N. Y.

A Great Name in Printing



BACK OF EVERY LINOTYPE are those valued ingredients . . . *quality and experience.* Years of research and engineering, with the attendant tests, assure the purchaser of Linotype products the best—always.

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—FROM A WEST-COAST PRINTER

Linotype Garamond Bold No. 3 Series

Pressroom Foreman's Experience With Synthetic Rubber Base Inks

By STEPHEN PORTER LATHROP

SYNTHETIC rubber base inks are so new that too much isn't known about them. Even their manufacturers do not fully understand them, their maximum uses, advantages and drawbacks. Time, of course, will bring with it all of the answers along with improvements in their manufacture. In the meantime it will be a part of the service that individual printing firms can render to the industry as a whole to keep and publicize experience data on the use of synthetic rubber base inks on various jobs.

The McQuiddy Printing Co. in Nashville, Tenn., prints a weekly trade journal consisting of one 16 p. form literally loaded with 133 screen halftones on a 35 x 45 sheet, work and turn. The run is 6000 and one day is allowed to print, fold, bind and mail the entire edition.

Ross Moores, Pressroom Foreman, decided this job might well be used as a sort of proving ground for the new synthetic rubber base inks. He wasn't too certain as to what the manufacturers of these inks might think about the guinea pig idea, so he decided to go ahead on his own and conduct a little experimentation. He hoped he might obtain some useful data on inks and at the same time find one, at least, that could "take it" and deliver a first class job.

There were plenty of disappointments during the experimentation and some of the printers enlarged their vocabularies during the process but the final results warranted it all. Mr. Moores found three brands of synthetic rubber base inks delivered the goods on the job on which they were used.

"In working with these inks," says Mr. Moores in discussing their use, "I found out considerable about them, some of which might be known and some of which might be a bit new. For instance, the use of this type of ink with rubber rollers is out. The synthetic rubber in the ink has a natural affinity for the rubber in the rollers which doesn't leave the pigment on the printing job. On composition rollers, however, it works swell, without a bit of trouble insofar as the rollers are concerned.

"I found that these inks will work on machine finish s. and s.c. paper but that it doesn't dry so fast as on enamel or coated stock. However, on starch-coated stock the ink doesn't bind so well which makes starch-coated stock less desirable to use.

"Using these inks in the printing of the weekly trade journal, the form for which was literally sprinkled with 133 screen halftones, we found that the ink set in 30 sec., that it dried sufficiently to back up with the same form, fold or trim in 5 min., which was a great saving in press time because by the time the first run was off the first sheets were dry enough to be backed by the same form. And as more sheets were needed they, too, would be dry enough for backing up.

"In running what was definitely a heavy form we never slip sheeted since the danger of offsetting was practically nil.

"Only on rare occasions did we have to use the spray gun or gas burner. In fact, we generally run on the fly.

"Actually we used less of these inks than we would have used if we had used regular halftone inks. The saving ran from 20% to 25% less in favor of these synthetic rubber base inks. However, these inks do not produce quite the same sparkle that a good halftone ink will give.

"In making ready they demand a slight increase in impression, anywhere from 0.001 in. to 0.002 in. more, or one or two tissues more. This extra impression is necessary to push the vehicle for the pigment in the ink into the paper, leaving the color only on top of the paper. Unless there is this increased impression the vehicle of the ink won't be pushed into the paper and the ink won't work properly.

"In preparing for a press run the usual custom of taking a sheet off the press and smearing a finger over it to see if the quantity of ink is correct cannot be used for the simple reason that it dries so rapidly it will never smear. But if too much ink is used it will shortly pile up and begin to fill in the halftones. The way to

Conference Dates

(with organization names and principal officers.)

ANPA Mechanical Conference—1948 Conference tentatively to be held in Chicago. Hotel and date to be announced later. J. L. Stackhouse, Chairman, Easton (Pa.) *Express;* Walter E. Wines, Manager, ANPA Mechanical Dept., 370 Lexington Ave., New York 17, N. Y.

Great Lakes Newspaper Mechanical Conference— Pantlind Hotel, Grand Rapids, Mich., Oct. 26, 27, 28. President Deo A. Padgett, Composing Room Supt., Cleveland *Plain Dealer;* Secretary Al. P. Oberg, Composing Room Supt., Flint (Mich.) *Journal.*

International Association of Printing House Craftsmen — Grand Union Hotel, Saratoga Springs, N. Y., Aug. 31, Sept. 1, 2, 3. Wm. H. Griffin, President, Griffin Bros., 447 Sansome St., San Francisco, Calif.; Secretary, Pearl E. Oldt, 702 Griswold St., S. E., Grand Rapids 2, Mich.

International Trade Composition Association — Book - Cadillac Hotel, Detroit, Mich., Aug. 28, 29, 30. Frank M. Sherman, Executive-Secretary, 1015 Chestnut St., Philadelphia 7, Pa.

Iowa Daily Newspaper Mechanical Conference—Russell-Lamson Hotel, Waterloo, Ia., May 15, 16 and 17, 1948. President, Ed. C. Funk, composing room foreman, Waterloo, (Ia.) *Daily Courier;* Secretary-Treasurer, Paul Kamler, mechanical supt., Clinton (Ia.) *Herald.*

Lithographers National Association—W. Floyd Maxwell, Executive Director, 420 Lexington Ave., New York 17, N. Y.

National Association of Photo Lithographers — Book - Cadillac Hotel, Detroit, Mich., Oct. 22, 23, 24 and 25. Walter Soderstrom, Executive Secretary, 1776 Broadway, New York 19, N. Y.

National Graphic Arts Education Association — Byron G. Culver, president; Fred J. Hartman, educational director, 719 Fifteenth St., N. W., Washington 5, D. C.

New England Mechanical Conference—Hotel Statler, Boston, Mass., Nov. 8 and 9, 1947. President, Wm. F. Madden, Composing Room Supt., Worcester, (Mass.) *Telegram-Gazette.* Walter C. Crighton, Secretary-Treasurer, New London (Conn.) *Day.*

Northwest Mechanical Conference — President Charles N. Bertram, Pressroom Supt., St. Paul (Minn.) *Dispatch and Pioneer Press.* Vernon Eck, Secretary, 3725 48th Ave. S., Minneapolis 6, Minn.

Pacific Newspaper Mechanical Conference — Fairmont Hotel, San Francisco, May 1, 2 and 3, 1948. President J. W. Fitzsimmons, San Francisco (Calif.) *Call-Bulletin;* Secretary for the North, Edw. N. Conley, color press foreman, San Francisco *Chronicle;* Secretary for the South, Fred J. Moyer, Los Angeles, *Daily News.*

PNPA Mechanical Conference — William N. Hardy, Manager, PNPA, 209-213 Telegraph Bldg., Harrisburg, Penna.

Printing Industry of America — French Lick Springs Hotel, French Lick, Ind. Sept. 22, 23, 24 and 25. James R. Brackett, General Manager, 719 Fifteenth St., N. W., Washington, D. C.

SNPA (Eastern Div.) Mechanical Conference—Walter C. Johnson, Manager SNPA, P. O. Box 1569, Chattanooga 1, Tenn. Chairman Executive Committee, I. J. Gardner, jr., Composing Room Supt., Chattanooga (Tenn.) *Times.*

SNPA (Western Division) Mechanical Conference — February 18, 1948. Location to be selected later. Chairman, W. F. Thompson, Austin (Tex.) *American-Statesman.* Secretary, C. W. Tabb, 723 Texas Bank Bldg., Dallas, Tex.

use this ink is to run light at the start and increase slightly the quantity of ink reaching the form until the desired color is obtained and then stop. In this way, the possibility of getting too much ink will be avoided.

"On short runs, and where time is a definite limit, I have found these inks very good. They can be left on the press for from 24 to 48 hours without drying up which is a distinct advantage in cases where other forms are not ready to go on the press. These inks won't skin over so quickly either. I have checked on this and found that even after a week, there would be no skinning over in the can. The fact that they can be left for a long period on the press is an advantage on runs that are made at night. There is no need to keep the wash-up boy after hours to clean up the press. He can do that the next day without negative results.

"These synthetic rubber base inks cannot be mixed with linseed oil inks. That is definitely out. They can be used to overprint on linseed oil inks but the results are far from satisfactory. Linseed oil inks cannot be used to overprint on these synthetic rubber base inks. That, too, is out.

"These inks are still restrictive in their use, with the colored inks still very much in the experimental stage. But within certain limitations they do work out very well and possess the advantage of quickness for work that is not too exacting."

Southwestern Graphic Arts Conference

THE Southwestern Graphic Arts Conference held in Wichita, Kan., at the Lassen Hotel on May 8, 9 and 10 was attended by 316 men and women. Jack Manning, President of Tri-State Printers Association under whose auspices the Conference was sponsored, keynoted the Conference in his opening speech when he said, "I am convinced that American trade and industry have a life and death dependency on our industry."

Printing Equipment Engineer is reporting only that part of the conference which is of interest to its production and mechanical executive readers.

J. L. Frazier, Editor of *Inland Printer*, pointed out the many new ways of doing the job and stressed the point of the future possibilities in printing.

T. E. Dunwody, Editor of *American Pressman*, explained the progress that printing equipment was making and the future possibilities in store.

The Saturday (May 10) Clinics offered much information. Two Craftsmen's Clinics, it is reported, were crammed full of meaty information, interesting to both management and craftsmen. H. Milton Jungbluth, Manager, Western Newspaper Union, Kansas City, Mo., acted as Chairman of the Typographic Clinic. John Lamoreux, Vice President of Warwick Typographers, St. Louis, Mo., gave instruction on Typographic Design and Layout. Walter F. Schultz, Production Editor of *Farm and Ranch* (Dallas, Tex.) told about Composing Room Practice. Les A. Neumann of the M & L Typesetting Co., Chicago, spoke on *Trade Composition*.

The afternoon Craftsmen's Clinic was on Printing Plates with G. Stuart Braznell, President Braznell Co., St. Louis, Mo., as chairman. John McMasters of the Eastman Kodak Co., told an attentive audience of the new *Photomechanical Developments*. H. J. Wood of Harris-Seybold Co., gave instructions on *Offset Plate Preparation*. Gradie Oakes of the Process Color Plate Co., Chicago, showed colored slides with interesting comments on photo-engraving. Gene C. Meston of Capital City Printing Plate Co., Des Moines, showed the progress of duplicate letterpress plates.

On Saturday, May 10, a regional association of Graphic Arts in the Great Southwest, embracing also the Mountain Empire of the Rockies, was formed. Among the officers elected to develop a Graphic Arts trade association of the Southwest are: President Wm. Maneke, Maneke-Hausher Printing Co., Tulsa, Okla.; and Eric J. Deubner, Executive Secretary, 149 No. Topeka Ave., Wichita, Kan.

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- *Tympan Easily Changed*... due to accessibility of reel rod and clamp bar.
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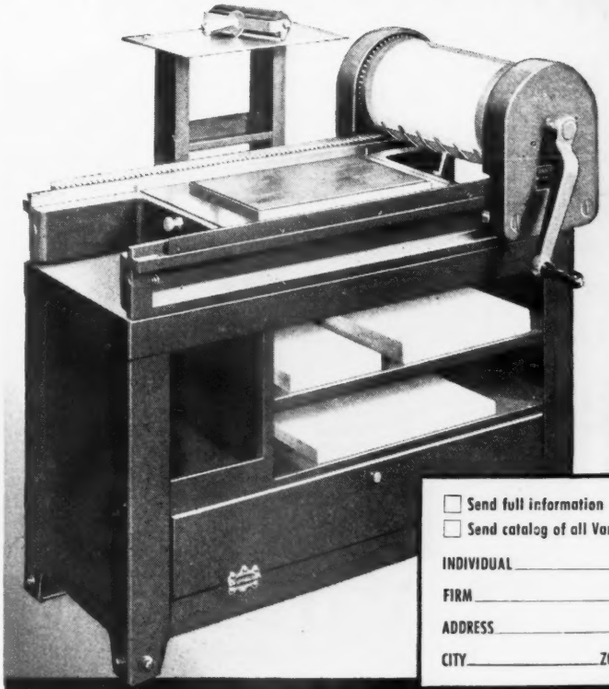

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Floor Space 2'7" x 3'9"

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Iowa Conference

(Continued from Page 37)

run, which is generally determined the afternoon preceding day of publication.

Press and Stereo Meeting

The Press and Stereo meeting was opened Sunday afternoon by C. C. Dale, press-stereo foreman of the Muscatine *Journal*.

Jack Kelin of Federated Metals Co., read a paper written by Herman Smith. This paper was carefully prepared and dwelt principally with the structure of white metals, mainly stereotype. Mr. Smith discussed the composition of stereo metals, its analytical problems, the care as to drossing, cleaning, proper heating; also how the various elements of the metal takes its form and place in press plates.

Next on the program was a talk by Joseph Goggin of the Goss Printing Press Co. Goggin's talk was in the form of questions and answers, in order to give as much information as possible as to causes of trouble with various molding combinations and to bring out many questions which perhaps otherwise would not have been aired. Mr. Goggin then went into an extensive discussion on tubular and semi-cylindrical plate casting, water circulation systems and automatic pouring and discussed the many advantages of vacuum boxes. He also brought out the fact that vacuum casting boxes would become standard equipment in the very near future.

Cy Dale, pressroom superintendent of the Muscatine *Journal*, then took up the pressroom questions which were quite interesting. They dealt with blankets, roller settings, impressions and general care of pressroom and stereotyping equipment.

Don Crews of Sam'l Bingham's Son Mfg. Co., gave a short history of the printing press and also the introduction of printing rollers and their structural content; he also described how printers rollers were made, the tack required to distribute the ink, how impressions should be set, the care and handling of both composition and synthetic rollers, cleaning and storage of surplus rollers.

Engraving Meeting

Robert V. Carlson of Harold M. Pitman Co., was chairman of the Engraving session held Sunday afternoon.

Mr. Carlson read a paper by Harvey Holsapple entitled *The Door to Better Photo-engravings*, which stressed the need of an open mind in approaching the various problems in making better printing plates.

Ken Waughtal of the Kayenay Engraving Co. talked to the group extemporaneously on the challenge of everyday problems in the business. He stated that in his opinion the larger value to be gained from the Conference was in the give and take of informal personal discussion between individuals and small groups. Mr. Waughtal discussed the approach to better negatives through accurate contact control, improved dot structure through the roll-up process.

With the group participating, a discussion was held on the need of teamwork for better newspaper reproduction. It was pointed out that in a production line of four departments, for instance, photographer, photo-engraver, stereotyper, pressman, the quality of the final reproduction can never be the average of each department, but rather the product of each department. Thus four departments doing a 90% job would only arrive at a 66% product. But if each did a 95% job the average would not increase 5% but 15% to about 81%. A small gain all along the line produces amazing returns.

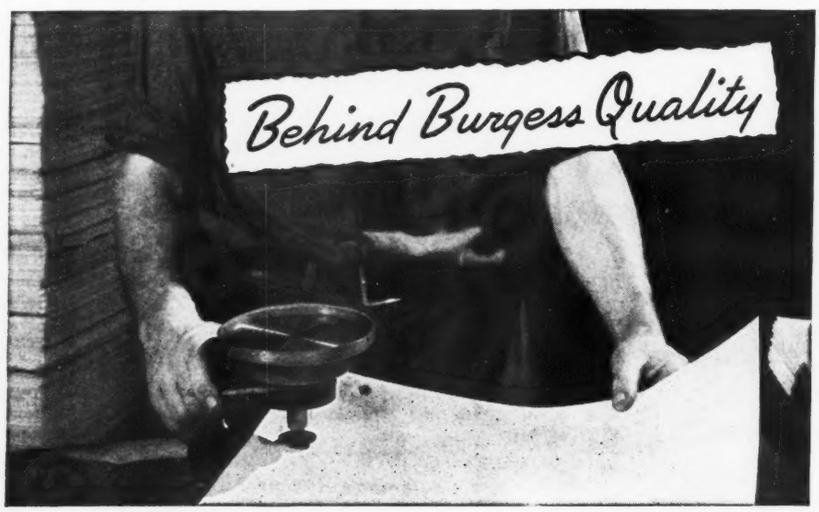
Lawrence Neibergall of Mason City, Iowa was elected chairman for 1948.

On Sunday night a banquet was given at the hotel for the entertainment of the members and their guests.

1948 Twentieth Anniversary Meeting

At the final meeting Monday morning it was decided to have the 21st annual meeting in Waterloo, where the conference was founded in 1927. The dates selected are May 15, 16 and 17, 1948.

Officers elected for the Iowa Mechanical Conference for 1947-1948 were President, Ed C. Funk, Composing Room Foreman, Waterloo *Daily Courier*; First Vice President, John Hardiman, Composing Room Foreman, Des Moines *Register*; Second Vice President, Howard Lee, Ottumwa *Courier*; and Secretary-Treasurer, Paul Kamler, Clinton *Herald's* Mechanical Superintendent.



LABORATORY METHODS ON THE PRODUCTION LINE

There's no variation in Burgess Chrome Mats . . . and no variation in the fine quality stereotyping they produce. Why? Because every step in their production is controlled under laboratory conditions. The Burgess plant is actually a huge laboratory . . . absolute accuracy and precision applied to the production line. It's one of the factors "Behind Burgess Quality."

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Patents

For The Graphic Arts Field

Covering patents issued May 6, May 13, May 20, May 27.

All new patents for the Graphic Arts are reported exclusively for Printing Equipment Engineer by Invention, Inc., an industrial patent research organization in Washington, D. C. Invention, Inc., presently has the only staff in the country that examines, in the U. S. Patent Office, the complete printed copy, drawing by drawing and page by page, every one of the several hundred new patents issuing each week. Printing Equipment Engineer is the only trade publication in its field offering a report based on this complete coverage. For copies of the patents listed here specify the patent numbers and send 25c for each separate patent, or 10c for each trade mark or design patent (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating

2,420,705. BOOKBINDING MACHINE is used for forming T-shaped slots through the back of a book and for passing a tape through the cross pieces of the T. It includes clamps for holding the sheets of a book together. Knives in knife-holders are adapted to pass through the book to form the cross piece of the T-slot. An end of the tape is releasably held against the back of the knife during the slot cutting operation so that the tape is drawn into the slot with the knife, where, upon release from the knife, it remains upon completion of the cutting operation. Invented by Thomas Harrison, Colindale, London, and John Luke Brooks, Walford, Wimborne, England. Unassigned. Application March, 6, 1944. In Great Britain March 2, 1943. 11 claims.

Composing Room Equipment

During the four weeks covered by this report, no patents have issued for this heading.

Feeding, Folding and Delivery

2,420,399. DRIER HAVING RADIANT HEATERS AND AUTOMATIC CONTROL MEANS is for use with printing machines for drying sized, dyed or printed textiles. The web is moved along and supported in loop formation on a longitudinally extending frame, at the entrance of which is located a pair of squeeze rollers for subjecting the web to pressure. The web is wound on a drum at the opposite end of the frame. Both the sqeeze rollers and the drum are power operated. There are banks of drying lamps arranged on both sides of the looped paths of travel of the web over the frame. Thus a radiant heat drying action is imparted and instantaneous penetration of heat to all yarns of the web is assured. Invented by Francis H. M. New, Taylors, S. C. Unassigned. Application June 12, 1941. 11 claims.

2,420,739. STEAM DRIER is described as used for drying designs printed on paper bottle caps before they are cut out of the web on which they have been printed. Apparatus comprises a casing which may be swiveled on a flat bed or table upon which the web travels from the printing press. Bottom of the casing has an opening which spans the path of the traveling web and steam nozzles within the casing direct jets of steam through the opening onto the web. Condensate dripping from the nozzles is trapped in troughs under the nozzles and discharged through a drain pipe. Invented by William C. Dorsch, Jamaica, N. Y. Assigned to American Seal-Kap Corp. of Delaware, Wilmington, Del. Application October 25, 1945. 1 claim.

2,421,283. WEB DRYER ARRANGEMENT features a control for cutting into and out of service a series of burners positioned within a drying hood, the burners progressively supplying more heat for drying a printed web, as the speed of travel through the hood is increased, and vice versa.

Starter buttons are fixed to contact points corresponding to the different speeds of travel of the web at which it is desired to energize relays which place the burners in service. As a controller cuts in more and more starter buttons which energize their corresponding relays, the additional corresponding burner sections will be cut in to provide increased heat. Invented by Bernard Offen, Chicago, Ill. Unassigned. Application May 7, 1943. 3 claims.

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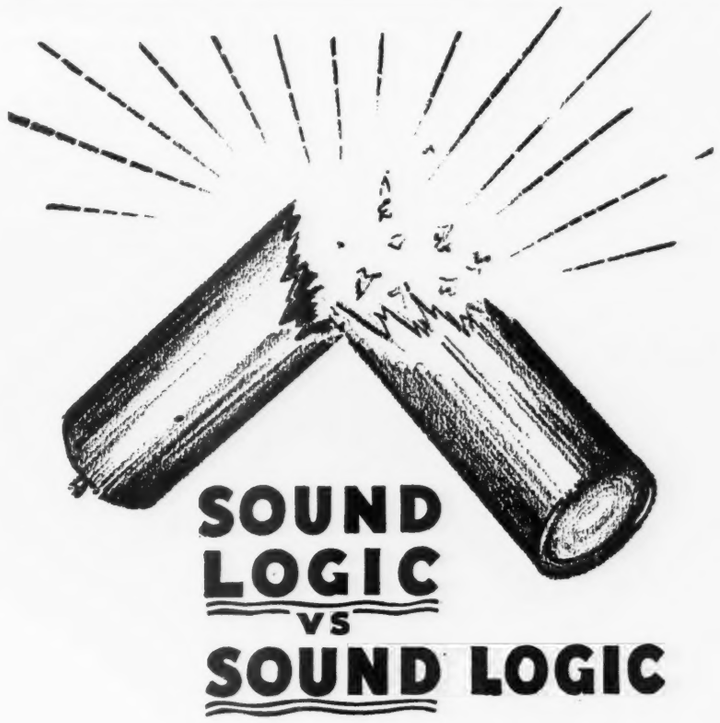

A FIRECRACKER makes a lot of sound . . . but carries little conviction.

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ZOMO ELECTRIC ZINC ◆ A-Z ELECTRIC ALLOY

Plate Making

During the four weeks covered by this report, no patents have issued for this heading.

Printing Inks and Related Chemicals

2,420,390. PIGMENTED COATING COMPOSITIONS to be used as printing inks and paints are formed of a drying oil as a liquid medium, a pigmenting agent consisting of an insoluble condensation product of a saturated acyclic aldehyde with a saturated acyclic ketone and containing an adsorbed dye, and a drying agent for the oil. If carbon black is used as the pigment, a resinous insoluble aldehyde-ketone condensation product containing an absorbed blue dye may be used as a toner instead of the usual Prussian blue. Invented by Thomas C. Whitner, Elizabeth, N. J. Assigned to Chemical Laboratories, Inc., a corporation of New Jersey. Application October 22, 1943. 13 claims.

2,421,291. PRINTING INK is characterized by high press stability and remains open on the press rollers and inking mechanism under conditions of high relative humidity. It is capable of being set to non-offsetting conditions by application of moisture after printing. Ink is composed of a coloring material, a nitrocellulose above 13% and up to about 40%, and about 40-70% of a water miscible liquid component compatible with the cellulose. Latter ingredient consists of an organic carboxylic acid ester of a dihydric alcohol in which only one of the hydroxyl groups of the alcohol is esterified. Invented by Alfred F. Schmutzler, Boonton, N. J. Assigned to Sun Chemical Corp., a corporation of Delaware. Application April 2, 1943. 10 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Munsey Bldg., Washington, D. C.

Printing Presses and Equipment

2,420,080. INKING MECHANISM includes a number of multiple cylinder pumps, each supplying a continuous flow of ink to a separate area of the form to be printed. Cylinders in each pump are arranged in parallel and are provided with a rotary valve which successively connects the cylinders to an intake port in communication with an ink supply and then to an outlet port connected with a selected area of the form through ducts. In the illustration given in the patent, pump outlets are arranged in four rows of eight each and ink is pumped through the ducts to an ink distributing cylinder and then to the plates on a printing cylinder. All pumps are actuated from a common drive shaft and the flow of ink may be shut off from sets of eight of the pumps. Invented by William F. Huck, Richmond Hill, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application March 24, 1942. 13 claims.

Southwestern Graphic Arts Board Meets

The Southwestern Graphic Arts Conference held its first board meeting at the Herring Hotel, Amarillo, Tex. in June. Eric Deubner outlined the purposes of the Conference. The purposes as approved by the board are to promote and encourage the products of the Graphic Arts Industry; create fair trade and good fellowship; to undertake research in marketing, management, and production processes; to provide educational facilities in management and labor; to disseminate information of value to the industry; to conduct clinics and meetings; to provide plant and management engineering service; and to bring about close cooperation between local associations and national associations within the Graphic Arts.

President Maneke announced the next board meeting will be held in Oklahoma City on September 13 and 14.

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If you suffer from printer's hypertension
due to printing troubles,
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on their 143-year record for helping
to produce fine printing at a
saving of time and money.

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3 products for better STEREO PRODUCTION

Eastern products will help you get sharper, better looking papers out faster. To meet today's schedules, mat molding must be quick, sure and reliable.

Eastern TRU-MOLD Cork Molding Blanket with just the right amount of Bakelite to insure perfect density. Guarantees maximum "come-back" for sharp, clean impressions, durability and minimum edge cracking.

Tru-Molds can be had in either "Medium," "Medium-Hard" or "Hard" density in standard sizes and 21 x 25 x $\frac{3}{16}$".

"FLECTO" Gummed Backing Felt assures clean cut molds. Sticks flat to the mat regardless of scorching heat. Does not crack, slip or crystallize. "Flecto" is uniform, soft, pliable. It does not peel or separate in layers, but conforms to and shrinks with the mat.

Available in sheets or strips in the following sizes:

Gauges .021, .025, .030 (Green) sheeted 18" x 24".

Gauge .035 (Red) sheeted 18"x24".

Gauges .040, .045 (Green) sheeted 18"x22".

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Cut into strips 9" or 18" long and $\frac{1}{8}$" to 1" wide at no extra charge.

DEEPMOLD CREEPER — New — Superior. The most advanced development in molding creepers. Deepmold gives sharp, clean halftone reproduction, does not cut or spread column rules—molds extra deep bolsters.

Sizes	.062 Prices	.090 Prices
20x24x"	$3.50 ea.	$4.75 ea.
21x25x"	3.65 ea.	5.00 ea.
22x26x"	3.80 ea.	5.25 ea.

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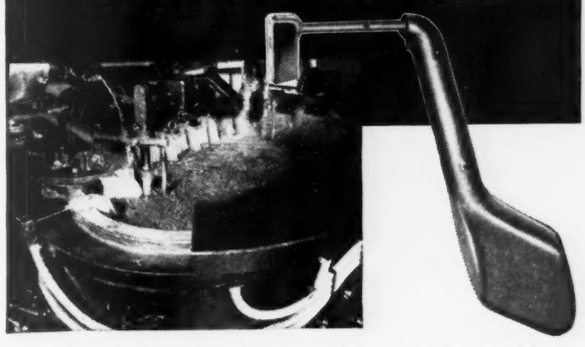

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Whether you are modernizing your present plant or planning a new one, you'll want to investigate how you can convert quickly and easily to the modern electrical way of stereotype melting. The Heating Specialist in the nearest G-E Office will be glad to discuss this with you.

In the meantime, **write for free bulletin GEA-4653.** *General Electric Company, Schenectady 5, N. Y.*

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Yield Greatly Increased Production

AN increase in newsprint, paper and paperboard production should result from a chemically treated type of papermaker's felt now on the market, according to American Cyanamid Co.'s Textile Resin Department. By processing felts with Lanaset resin, a melamine compound, using a technique developed by the Orr Blanket Company, the normal life of papermaker's felts has been substantially increased.

Laboratory tests previously had shown that processing with Lanaset resin increases resistance of fabrics to standard abrasion tests. It was this characteristic that led the Orr Felt Co. to experiment with Lanaset resin for use in papermaker's felts.

Some mills have reported an increase in productivity, through the use of these new felts, as high as 15 per cent. To date the felts have been tested in such widely divergent types of mills as fine paper mills, kraft paper mills and paperboard mills.

Test runs in numerous paper mills have shown the new felts in many cases lasted more than double the normal life of a felt. This longer life eliminates considerable down-time of machines required for the replacement of worn-out felts.

The new long life felts were produced by the Orr Company after a five-year search for a method of making papermaker's felts last longer. The answer to the problem was found in the Lanaset resin treatment of the long, endless belts of felt which are used in the mill to convey sheets of wet paper or paperboard while excess water is drained away.

Plant Expands

The Hilo *Tribune-Herald* in Hilo, Hawaii, completed the installation of a Goss rotary press and issued the first paper printed on this press June 15. This is the first step in plant expansion program under the direction of Dean D. Sellers, vice president and general manager.

Mr. Sellers arrived on the Pacific coast the latter part of June to spend a month studying printing plant layout for the new building which is to be erected in Hilo, and to attend the Newspaper Advertising Executives association conference in San Francisco.

THERE'S COLOR

in your future

Yes, there's color in the future of your engraving plant. More color copy is coming your way. Handle it rapidly, efficiently and economically and color makes profits. Trouble with register, necessitating makeovers, means the color in your future is dark. For close registration, trouble-free color plates, use Imperial Register-Redibak—the zinc with all objectionable stretch removed. Prepare now for the color in your future.

IMPERIAL TYPE METAL COMPANY

SERVING THE GRAPHIC ARTS INDUSTRY ONLY

Philadelphia 34 • New York 7 • Chicago 50

Imperial

Color Faking

(Continued from page 36)

detail. In such cases, the entire section of the flag with stripes is left on the red mask, thus printing both the red and the white stripes in red. This does not produce a perfect result but it is about the best that can be done where small objects are shown.

Color Masses Essential

This brings up an important point. Much of the success that can be obtained with this process consists in using halftone cuts that have masses of concentrated color and little if any spots of color here and there. For instance, a halftone of a large red brick building will reproduce very well. If there is any ivy vine growing up one side of the building, that, too, will reproduce well. But if the ivy is scattered with glimpses of red brick showing through, it will be more difficult to obtain a good job. The same would be true of a girl with a flowered dress. Thus it is best to select photographs from which the halftones are to be made that have the color pretty well concentrated with minimum spots of color.

In cutting the masks it will often be possible to make two masks at the same time out of the same single piece of cardboard. For instance, it will often follow that the blue and red masks can be made out of the same impression since in many instances there would be no overlapping of color between the red and the blue.

It will require from 30 min. to 1 hr. to make the average mask, depending, of course, on the size of the cut, the amount of cutting away that must be done and not a little on the experience of the pressman making the mask.

The Inks

Four-color process inks are used except that the black ink which is the first color

FAITHFUL MIDDLETONES
STAYBACK
SOLID BLACKS
Watch the shaver, BOY—fingers don't come by the case like Wood Dry Mats..!
SAMPLES SENT FREE TO YOUR SPECIFICATIONS
DEEP MOLD
CLEAN HIGHLIGHTS
PLASTICITY
WOOD FLONG CORPORATION
HOOSICK FALLS • NEW YORK
New York City Office:
551 FIFTH AVENUE, NEW YORK 17, N. Y.

Lithographic Technical Foundation

RESEARCH

EDUCATION

The research staff of your Lithographic Technical Foundation has solved many of the technical problems you are faced with in everyday production but it remains the responsibility of the individual plant to apply the knowledge to its own particular problems.

The educational staff is eager to assist in establishing or improving your present "in plant" training program, for junior executives, apprentices or journeymen.

There are sixty-five different publications available which are the result of twenty-two years of research and represent the lifetime experience of plant foreman craftsmen and superintendents. The shop manuals and texts range in price from $.25 to $1.00 and cover every part of the lithographic offset process in detail. Members receive the regular 50% discount on all publications.

Send for our catalog or ask about our "in-plant" training teaching materials

LITHOGRAPHIC TECHNICAL FOUNDATION
RESEARCH EDUCATION
131 EAST 39th STREET, NEW YORK CITY

Sure Bets —

BOOTH'S ZINK CUT CEMENT

You can mount cuts quicker, at the same time eliminate risk of out-of-position cuts with Booth's Zink Cut Cement. This reliable, special purpose adhesive sets quickly, holds fast. It comes in a tough, handy tube dispenser. You can bet on Booth's Zink Cut Cement... it's the fastest cut mounting method known.

PRICES: In the United States: 75c per tube, $6.00 a dozen tubes, $5.00 a dozen in gross lots.

BOOTH'S BLACK RUBBER ROLLS

Sweet running, long wearing, extra responsive, Booth's Black Rubber Rolls are favorites with line-casting machine operators and machinists. They provide maximum cam tread friction. With Booth's Black Rubber Rolls on your machines you'll see why they're so popular. Get a supply.

PRICES: $1.45 per pair—7.75 per dozen

E. A. Booth Rubber Co.

MAHONING BANK BUILDING
YOUNGSTOWN, OHIO

Speed Up Your Work!
Save Money and Time-
with
SYNTRON
"VIBRATING"
PAPER JOGGERS

Their 3600 vibrations per minute jog paper 3 to 4 times as fast as by hand, without pounding.

3 types—single action, double action, and automatic.

7 styles—two table models, five portable floor models.

Write for Descriptive Folder

SYNTRON CO.
577 Lexington
Homer City, Pa.

Eloquent testimonial
to the worth of the
CUSHMAN *Offset* MOTOR
is the continuing demand for it by Linotype and Intertype owners who have used it these many years.

INSTRUCTION and PARTS BOOK available to those without one.

Cushman Motor Division

LINOTYPE PARTS COMPANY
INCORPORATED
SOUTH HACKENSACK, N. J.

down must not contain any wax or drier. In the last color down, a little wax and drier is used to make it dry hard on top of the other colors in less quantity than would be used on a regular run. The idea is to use just enough wax and drier to hold the color on the paper.

Variation of Mechanical Color

If it is desired to do a better job than will result from using the process outlined above, a halftone cut can be made for each of the colors. Each cut will be a regular black ink halftone but with the screen turned at a different angle for each cut. The black cut will be made with the screen at 45 deg. angle, the blue at a 15 deg. angle, the red at a 30 deg. angle and the yellow at a 60 deg. angle. A color job printed from a series of cuts made in this way will result in a better job because the screen will not overlap as will be the case when black and the colors are all printed from the same cut. A job with a separate cut for each color, however, will run the cost up somewhat.

In printing a color job by the faking process, it may be necessary to give some portions of the color being printed a bit more impression in order to bring out the proper density of the color. This can be done by means of a slight overlay pasted on the mask just as would be done by adding a slight overlay to the tympan paper in regular printing.

District Office Moved

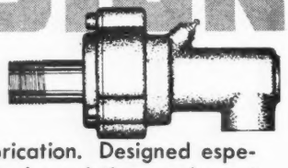
The Chicago office of Geo. H. Morrill Div. of Sun Chemical Corp. moved recently to 42 N. Racine Ave. This office is headquarters for the midwest area, with branch offices in Detroit, St. Louis and Fort Worth.

ANPA Conference

(Continued from Page 30)

for repeat ads is damaged or worn out from repeated use; (3) Proper filing and care of material received by newspapers, particularly when received far in ad-

PROVED DESIGN



of Deublin Rotating Water Joints eliminates costly "down time" and reduces maintenance to periodic lubrication. Designed especially for the printing trade by printing equipment engineers, Deublin Joints are used for cooling revolving cylinders or drums. These long life units are leakproof, economical, and tough. See Bulletin D-10.

DEUBLIN COMPANY
NORTHBROOK ILLINOIS

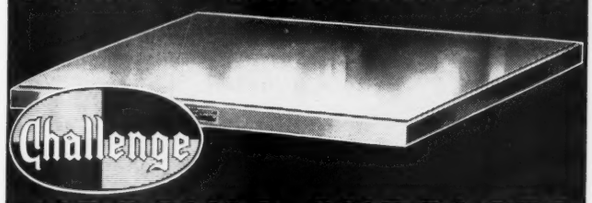
HOW TO ADJUST
WORK-UPS
By Wm. H. Lichter and Geo. F. Smalley

This 24-page booklet analyzes causes of work-ups and gives proper procedure for locking up forms.

PRICE $1.00 CASH WITH ORDER

PRINTING EQUIPMENT *Engineer*
1276 West Third Street, Cleveland 13, Ohio

TRUE — UNYIELDING



IMPOSING SURFACES

SEMI-STEEL

★ Used in busy, up-to-the-minute shops to produce quality work in less time. Precision ground to a high degree of accuracy, and will maintain that accuracy when properly supported. Two inches thick with heavy reinforcing ribs at right angles to prevent sag.

Use a Challenge Imposing Surface and you will never go back to the *old-fashioned stone* . . . . Built in 18 standard sizes—all precision ground—except the 28x120 and 28x144 inch sizes which are planer finish. Write for latest data.

547

THE CHALLENGE MACHINERY COMPANY

"Over Fifty Years in the Service of the Graphic Arts"

GRAND HAVEN — MICHIGAN

A GOOD TRY

is never wasted

Managing editor and production manager shake hands on that proposition in the plant of many a newspaper that did NOT win any specific award for printing excellence. . . . Certified applauds the efforts of all such. The skill, the discipline, the finer production that have come from their striving are real prizes and ones which all can win. . . . To those who have missed the coveted emblems of victory, we can only say—"Better luck next time."

For dependable stereotyping, rely on Certified Mats

Certified DRY MATS

CERTIFIED DRY MAT CORPORATION, 9 Rockefeller Plaza, Dept. M, New York 20, N. Y.

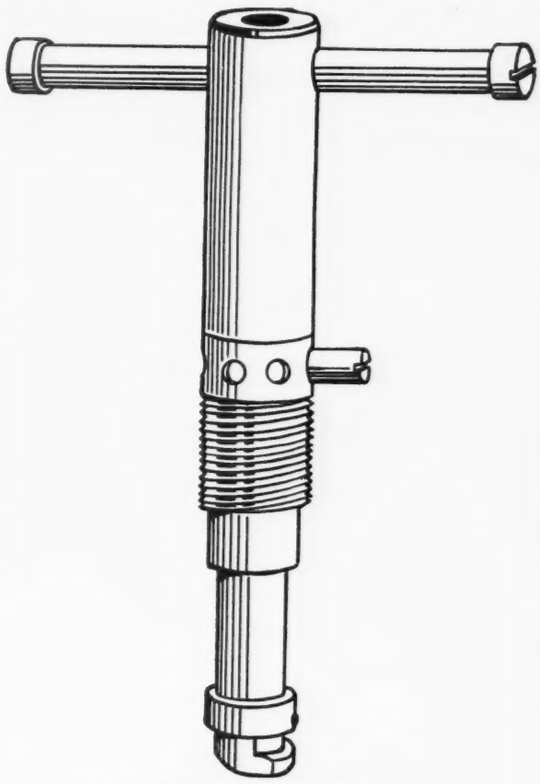
Another . . .

STAR *improved* PART

makes its debut:

The Adjustable

VISE LOCKING SCREW



- Tip Replaceable
- Adjustable for wear in both TIP and VISE LOCKING STUD

(Part No. E133)

DETAILED FOLDER
EXPLAINS ALL ADVANTAGES
WRITE ANY OFFICE BELOW

Wise Machinists avoid trouble. They specify ACE BELTS

PRECISION
TRADE ★ MARK

LINOTYPE PARTS COMPANY

Factory and Main Office:

SOUTH HACKENSACK, N. J.

Branch Office: 1327 BROADWAY, KANSAS CITY 6, MO.

CHICAGO • MINNEAPOLIS • DENVER

INVESTIGATE

New Penetrate Mold Cleaning Service

Leading newspaper and commercial plants find the new Penetrate Mold Cleaning Service to be less troublesome, more efficient and more economical than shop hand cleaning methods.

This service rendered periodically brings a mold cleaning service unit into your plant, all your molds are chemically cleaned and processed without interrupting production.

Recommended by Intertype, the Penetrate Service restores mold to original finish, eliminates carbon deposits and metal adhesions, gives freedom from hard injections, leaves no perceptible coating, no rounding of mold cells. Compare this cleaning with hand methods.

Investigate this NEW Service

Write giving number of molds in your plant. We can then quote on Penetrate Service for your plant.

EVERETT G. SHAFTSTALL CO.

538 South Main Street **Marion, Ohio**

Act NOW!

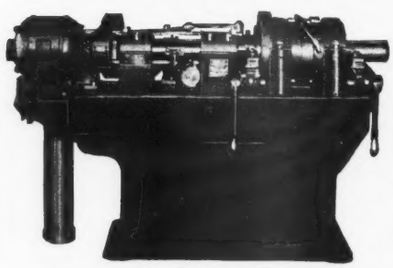
to reduce plant costs for maintenance and repairs with the TORNADO INDUSTRIAL VACUUM CLEANER

Can be used anywhere in your plant to remove dirt, dust, metal scrap, filings, and similar debris.
Motor fan unit removed quickly to become a convenient hand blower. Write today for literature or FREE demonstration.

BREUER ELECTRIC MFG. CO.
5114 Ravenswood Ave.
Chicago 40, Illinois

DUPLEX TUBULAR FINISHING MACHINE

It takes but a few seconds for this combination machine to cut off the tail, bevel both ends, and bore the inside of the plate to correct size.



★

THE DUPLEX PRINTING PRESS CO.
BATTLE CREEK MICHIGAN
New York Chicago

vance of insertion date; (4) Consideration of the advantages of having one individual in the newspaper organization act as liaison with agencies on mechanical matters.

Mr. Dearnley reported on the viewpoint of AAAA members on the committee. He stressed the need for standards, for guidance of those concerned with preparation of advertising copy and platemaking. He asserted, "the committee can only proceed according to the interest displayed in the activities of the joint committee." He spoke of the three regional meetings on National Advertising Platemaking which had been held in Detroit, Cincinnati and Cleveland as well as one far West meeting. He received enthusiastic reports about the value of these particular meetings.

Mr. Myers also put forth the thought that some day newspaper publishers will recognize the value of appointing a man who is experienced in newspaper reproduction, to handle the problems associated with better newspaper printing. He suggested the title of such a person would be "Superintendent of Quality." Such a man should be free from the worries of production or operational detail.

The "Webtip" Device

Reginald W. Tranter, Mechanical Superintendent of the Boston *Herald-Traveler*, exhibited a film illustrative and descriptive of the "Webtip" device which was recently developed in the plant of the *Herald-Traveler*. (See December, 1946 issue of *Printing Equipment Engineer*.) Mr. Tranter explained that the services of one man are required on a collect run to insert the pre-printed inserts in a paper. The services of two men are required on a straight run to watch the device and see that everything is running properly.

When queried as to the number of missed or misregistered inserts which are likely to occur, Mr. Tranter stated the record so far had been that 1 out of 1000 inserts are missed. The probability also is that approx. 20 inserts out of 1000 are slightly out of register.

In preparing the pre-printed inserts, Mr. Tranter said his organization preferred them to be printed on 40 lb. coated stock. He reported that a four-page 100 lb. paper folder has been inserted successfully.

Maximum speed of the inserting machine is 66,000 per hr. He stated that runs had been made over 50,000 per hr. press speed.

The paster in the device puts two spots of paste on the back top side of the sheet for fastening in position on the newspaper page.

Rotogravure Comics

Charles J. Hentschell, Production Manager of the St. Louis *Post-Dispatch*, discussed production of a rotogravure comic section in the plant of the *Post-Dispatch*. (See article in Oct. 1946 issue of *Printing Equipment Engineer*.)

A summary of Mr. Hentschell's address is as follows:

"The St. Louis *Post-Dispatch* first published its comic section in rotogravure last September 8, being the first newspaper in the country to use this manner of printing for a comic section. Dissatisfaction with Sunday comics as a printing medium prompted the St. Louis *Post-*

SYNTHOX ROLLERS *Ideal*

Best in the long run—proved in service!

Synthox rollers distribute moisture-set and linseed base inks smoothly and efficiently; special formulas for special purposes. Popular on large rotaries as well as on smaller, high-speed presses. Easily used and easily cleaned.

IDEAL ROLLER & MANUFACTURING CO. Chicago 8, Illinois Long Island City 1, N.Y.

The Royle Router

- A large table mounted on a rigidly constructed column.
- Convenient alignment and tightening of driving belts.
- Running parts designed to reduce vibration.
- Sufficient speed at cutter edge to route fine or rough out without reducing speed.
- Precisely fulcrumed elevating mechanism assures immediate reaction to pressure on the foot pedal.
- Changing cutter heads a matter of seconds.
- Speed and balance are built into Royle Routers.

JOHN ROYLE & SONS

Established 1855

10 Essex Street **Paterson 3, N. J.**

Our Neck is Out

every time you skim off dross

Performance of the type metal supply both before and after the addition of Plus Metal is Imperial's responsibility—that's why we say "our neck is sticking out every time you skim off dross". Imperial has the responsibility of furnishing the exact formulation of Plus Metal Alloy that will bring your working supply into ideal condition when added pound for pound of dross removed.

Records in our files, kept up-to-date by periodic analysis of your metal, enables Imperial to be **sure** they are sending you the Plus Metal that fits your needs. That is why "as soon as the first pound of Imperial Type Metal enters your shop, Imperial assumes the unconditional responsibility for that metal's performance."

Let us stick our neck out in your shop—write for information today.

IMPERIAL TYPE METAL CO.

Serving the Graphic Arts Industry Only

Philadelphia 34 **New York 7** **Chicago 50**

Imperial

BEVERIDGE DRY MATS *are Dependable*

SAMPLES TO YOUR SPECIFICATIONS
GLADLY SENT GRATIS UPON REQUEST

New Products Division
THE BEVERIDGE PAPER COMPANY
INDIANAPOLIS 4, INDIANA

60 YEARS OF PAPER MAKING SKILL

YOU'RE RIGHT ON THE TARGET...

WITH THIS NEW MODEL "45" C&G SAW TRIMMER

INSTANT, Accurate Saw Blade Adjustment. Just as easily and fast as pulling the trigger of a "45", the saw on the Model "45" C & G Saw Trimmer can be raised or lowered to exactly the sawing height required. A screw adjustment, accurate to .001 of an inch, always available.

STURDILY MADE, from new, light metals, the Model "45" Saw Trimmer includes such time-saving features as the Positive Work Holder, Right and Left-Hand Miter Vise, Chip Chute, Improved Angle Gauge.

Write for Illustrated Folder covering Model "45" Saw Trimmer and Accessories.

THE MORRISON COMPANY

(Formerly Milwaukee Saw Trimmer Co.)
125 W. MELVINA STREET, MILWAUKEE 12, WISCONSIN

ROTARY PRINTING PRESS

FOR SALE

Immediate delivery—Model IC Chambon Rotary, Three-Color and Varnish Printing Press. Prints maximum 13¾" across cylinders and 14⅛" around cylinders. Will print up to 450 units per minute. Extension dryer, slitting device, guillotine cut-off. Prints thickness from tissue to 30 point board. Purchased new last year.

Phone—Wire—Write

RICHARD G. LIPPMANN
PACKAGING SALES COMPANY
375 Colman Building Seattle 4, Wash.
ELiot 8850

WISE Buys

MODEL 8 LINOTYPE, Serial No. 49,000, two 90-chan. Mag., one 72-chan. Mag. 3 molds, AC Motor, Electric Pot, reconditioned—guaranteed. Immediate delivery.

MODEL 8 LINOTYPE, Serial No. 41,000, 3 Mag. 3 molds, AC Motor, Electric Pot, reconditioned—guaranteed. Immediate delivery.

5 full, 10 split 90-chan. Intertype Mag.

7½-2-824 IONIC W/B, over 10,000 new sort mats.

5½-32 No. 4 W/B No. 2, over 2100 new sort mats.

24-9V VOGUE BOLD WITH OBLIQUE, font, new mats, 72-chan.

30-2477 VOGUE BOLD, font, 550 new mats, 72-chan.

48-2512 VOGUE BOLD COND. Caps and lc, for model F or G side mag. New.

Over 100 fonts, slightly used mats. Ask for mat list.

William J. Wise

Printing Machinery & Supplies

32 Blvd. of Allies
PITTSBURGH 22, PA.

Dispatch to explore the possibility of changing the conventional method of printing Sunday comics.

"Newspaper printing, with the exception of rotogravure supplements, uses an oil as the vehicle for the transfer of the pigment to the newsprint. Since oil cannot be dried, it must be absorbed into the newsprint. There is a definite limitation on the amount of oil that newsprint can be expected to absorb or blot, so that when superimposing three and four colors of ink upon one another as is the case with colored printing, the amount of oil in the inks necessary for the proper printing is too great for the paper to absorb. The pressman, then, has only one recourse and that is to cut back or limit the amounts of ink that would normally be required. This results in weakened color values, far removed from what was originally intended. The basic solution of this problem rests in the capable hands of the ink makers. You have heard detailed reports by previous speakers at this meeting about the encouraging progress that is being made with newspaper color printing. Messrs. W. G. Forster, Tim Ryan and Ben Offen have given significant reports of the developments taking place to give newspaper industry better printing mediums.

With one of the best equipped newspaper-owned rotogravure plants in the country, we turned to rotogravure printing as offering a possible solution. Rotogravure uses a solvent as the vehicle for the ink pigment which is dried or evaporated with hot air driers, leaving the pigment, as much as is needed for reproduction, *on* the newsprint. No pigment is carried into the paper to give the blotted effect that occurs in letterpress newspaper printing. The result is that rotogravure printing has brilliance and luminosity.

The main problem that had to be overcome was the transferring of copy prepared in stereotype mat form to the rotogravure process. As you know, duplicate sets of mats are furnished to each newspaper participating in a campaign. These mats are made from a master set of engravings. This procedure also applies to syndicated comics. We had to use these mats as our starting point because we could not, nor did we desire to, go to the syndicates and agencies and ask for specially prepared rotogravure comic copy. We finally hit upon the idea of pulling a cellophane proof from a flat stereotype cast made from the mats furnished by the syndicates and the agencies. This cellophane proof, being transparent, becomes one negative and is the means of transferring to the normal rotogravure etching operation.

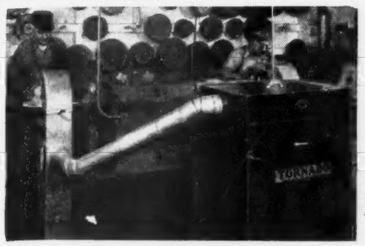
"Pulling cellophane proofs from the stereo casts sounds easy, but it was not until just recently when a new Vandercook proof press was installed that we were able to pull proofs that met the strict requirements of the rotogravure etcher.

"As the *Post-Dispatch* tailor-makes many of its comics to its own size, we must do our own benday. Formerly we bendayed on zinc which was etched and the final cut made. Instead of following that process of bendaying on zinc and pulling proofs from these cuts when we went to rotogravure, we successfully developed a method of bendaying directly on glass which is used as a negative just like cellophane proofs in the rotogravure process. Our results have been uniformly excellent.

"Unfortunately, 32 lb. newsprint stock today is very expensive and heavier newsprint correspondingly more expensive. By contrast, ink is an infinitesimal part of the cost of printing a newspaper. The price of ink could be doubled or tripled without costing a great deal, if improved results were obtainable. As a case in point, for every $1 million a publisher spends on newsprint, he spends only $25 thousand for the ink to print that newsprint. If ink cost would be increased 10% to improve the quality of ink it would amount to only $2500, whereas a 10% increase in newsprint cost would amount to $100 thousand. Can there be any doubt, then, that the logical point to improve in this wedding of ink and paper is the ink?

"We use roto newsprint, a 34 lb. stock on our rotogravure press, but experimental runs on regular newsprint have been successful; the 32 lb. newsprint will be used when newsprint is in better supply.

"The question has been asked as to what, beyond a better printing job, does the St. Louis *Post-Dispatch* expect to gain from comics in gravure? Well, as I see it, we know we must have comics in color from a circulation standpoint. If comics as now generally printed have appeal, there must be greater intangible appeal in the superior quality comic the *Post-Dispatch* is now printing. Since we must have comics from a reader standpoint, it is good business on the part of the newspaper publisher to have enough comic advertising in the section to make the section more than self supporting."



Remove
COSTLY DUST *at its* **SOURCE!**

Remove dust with TORNADO Dust Collectors. Designed for use with individual or battery of grinding, buffing or polishing machines—also removes fumes and vapors, recirculates clean, pure air. Many long tubular filters provide extensive filter surface—remove both large and exceedingly fine dusts.

Write for Free Literature

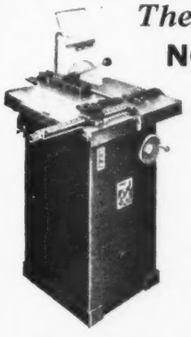
BREUER ELECTRIC MFG. CO.
5114 Ravenswood Ave. Chicago 40, Illinois

Cut Make-ready costs with

OPTI-CHEK

You can set up color plates for perfect register in a matter of minutes instead of hours—without use of measuring devices. Puts an end to waste of paper, cellophane, ink, etc. — No more idle presses Made in various widths to accommodate any printing press. *Write for more information.*

H. H. HEINRICH CO.
200 VARICK STREET NEW YORK 14, NEW YORK



The **NEW NOLAN** *"Chief"*
SAW-TRIMMER

This precision saw-trimmer saves time and money in your composing room. It provides fast, safe operation . . . gives you accurate saw-trimming at lowest cost.

Write for details . . . now!

NOLAN CORPORATION
1331 East Dominick St.
ROME, NEW YORK
Manufacturers of Finest Quality Printing Equipment

IMMEDIATELY AVAILABLE

TWO ELLESS STREAM FEEDERS
Model T34

Maximum sheet across press.....45″ and 45½″
Minimum sheet size.....14″ x 20″
Maximum speed—5,000 sheets per hour for sheets 35″ wide.

Both feeders new—priced for quick sale at $3,300.00 each. Address inquiries to the attention of Sales Manager, Babcock Printing Press Corporation, 38 Pequot Avenue, New London, Connecticut.

BABCOCK PRINTING PRESS CORPORATION
38 PEQUOT AVE. NEW LONDON, CONN.

OHIO KNIVES

O.K.
BLACKHARROW
PAPER TRIMMING KNIVES

● They give 25 to 40% longer service. Give better cutting at lower cost—proven under severe test in America's largest paper mills and printing plants. Made of a new alloy to withstand heavier cutting and still hold a keen edge for long runs. Ground with a slight concave and taper on the face for clearance—smooth cutting.

MAIL TODAY

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

Gentlemen: Please send without obligation specific data on knives I have checked.
☐ Trimmer ☐ Revolving Cutter ☐ Slitter

COMPANY_____
NAME_____
ADDRESS_____

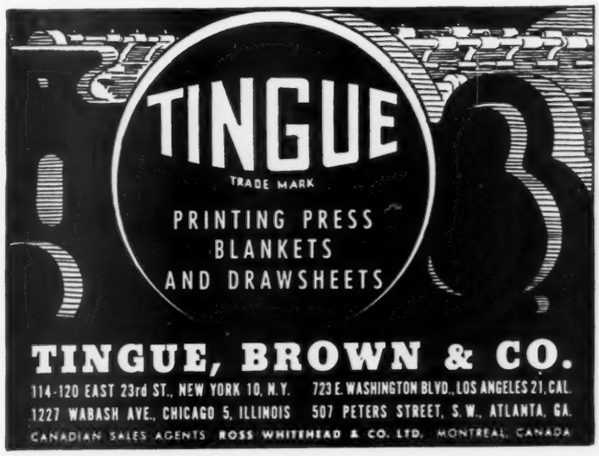
The **OHIO KNIFE** *Co.*
CINCINNATI 23, OHIO, U. S. A.

ENGINEERING FOR THE PRINTER & PUBLISHER

New Buildings . . . Modernization
Alterations . . . Surveys

ROBERT W. DICKERSON
508 ERIE BLDG., CLEVELAND 15, OHIO

Division of Maier & Walsh and Dickerson
ARCHITECT-ENGINEERS



TINGUE, BROWN & CO.
114-120 EAST 23rd ST., NEW YORK 10, N.Y. 723 E. WASHINGTON BLVD., LOS ANGELES 21, CAL.
1227 WABASH AVE., CHICAGO 5, ILLINOIS 507 PETERS STREET, S.W., ATLANTA, GA.
CANADIAN SALES AGENTS ROSS WHITEHEAD & CO. LTD. MONTREAL, CANADA

CLASSIFIED ADS ALL CLASSIFICATIONS

$.75 per line 1-9/16" wide. Minimum ad 5 lines

CASH WITH ORDER

Count approximately 25 characters per line.

CLOSING DATE—15th of Month preceeding Date of Issue. We will forward all mail addressed to Box Numbers. When answering Box Numbered ads, address as follows: Box Number . . . PRINTING EQUIPMENT *Engineer*, 1276 West 3rd Street, Cleveland 13, Ohio.

WANTED

STEREOTYPE FOREMAN for leading Montreal, Canada, newspaper. Reply stating age, marital status, experience and approximate salary required. Box 282 *Printing Equipment Engineer.*

MECHANICAL ENGINEER

with excellent record in cost reduction through printing research, desires an appropriate position with large or medium sized printing company. Box 273 Printing Equiment Engineer.

WANTED

sales representative to contact mechanical departments of daily newspapers by midwestern printing machinery manufacturer. State age, experience, etc. Reply Box No. 283 *Printing Equipment Engineer.*

FOR SALE

Lake Erie Directomat—Double Sided Operation has the Capacity of 2 mat rollers and requires the space of only one. Can be seen in operation in Chicago. Priced right for quick sale. Box 284, *Printing Equipment Engineer.*

FOR SALE

One 5-Deck double with Goss press—complete with compensating rollers for color, 100 H. P., 220 V.-A. C. drives with control boards and paper hoist. Bargain. G. R. Benedict, Evansville Printing Corporation, Evansville, Indiana.

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AVAILABLE IMMEDIATELY excellent condition late model DUPLEX heavy mat roller complete. HOE double screw stereotype flat shaver. STAHI newspaper size vacuum flat casting box. SIX INTERTYPE split magazine racks.
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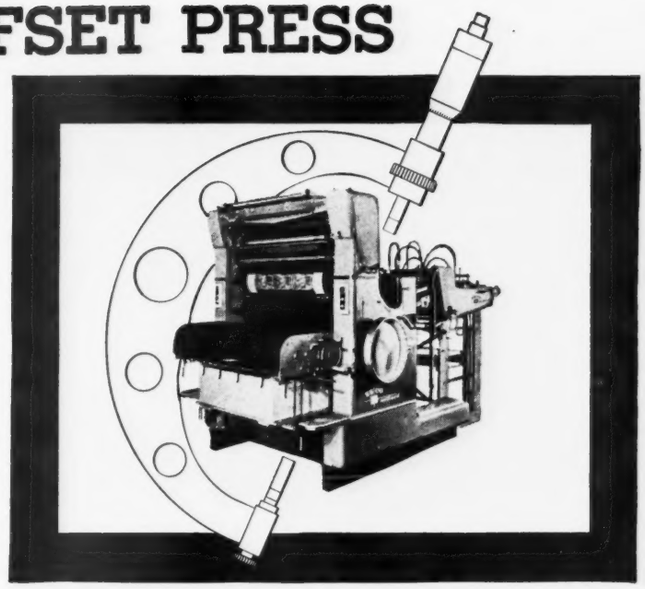

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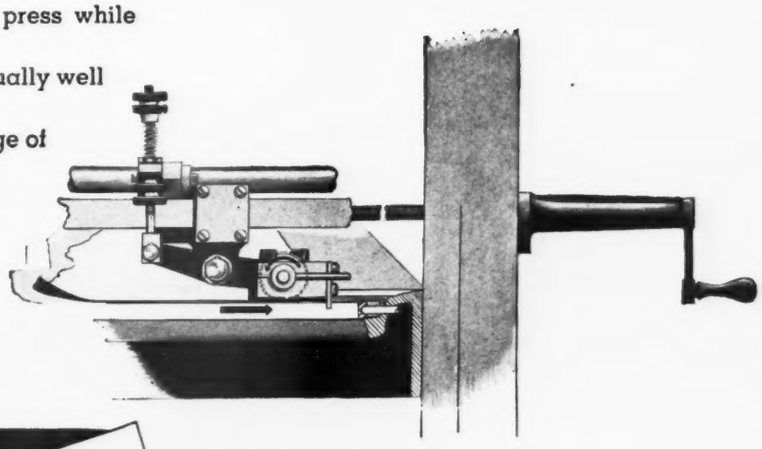
Sheet is side registered to either side by patented PULL side guide adjustable from either side of press while press is running. Guide works equally well on light or heavy stock. Full range of adjustment easily made without removing guide or any part of press.



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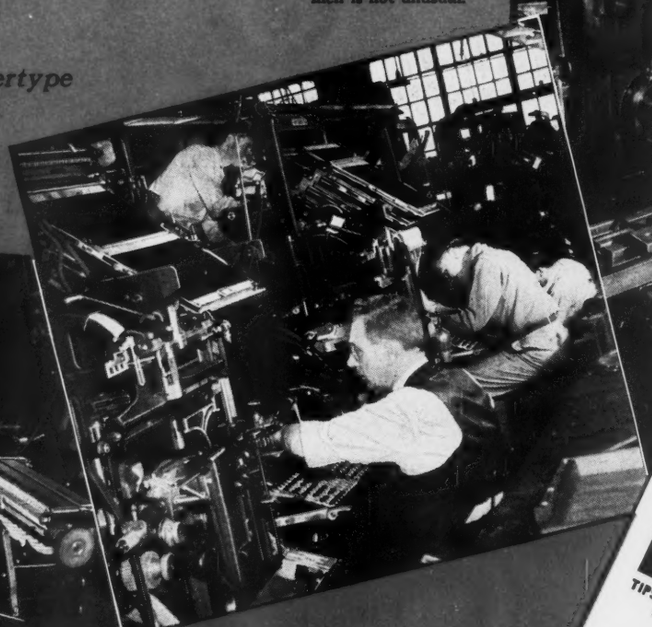

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